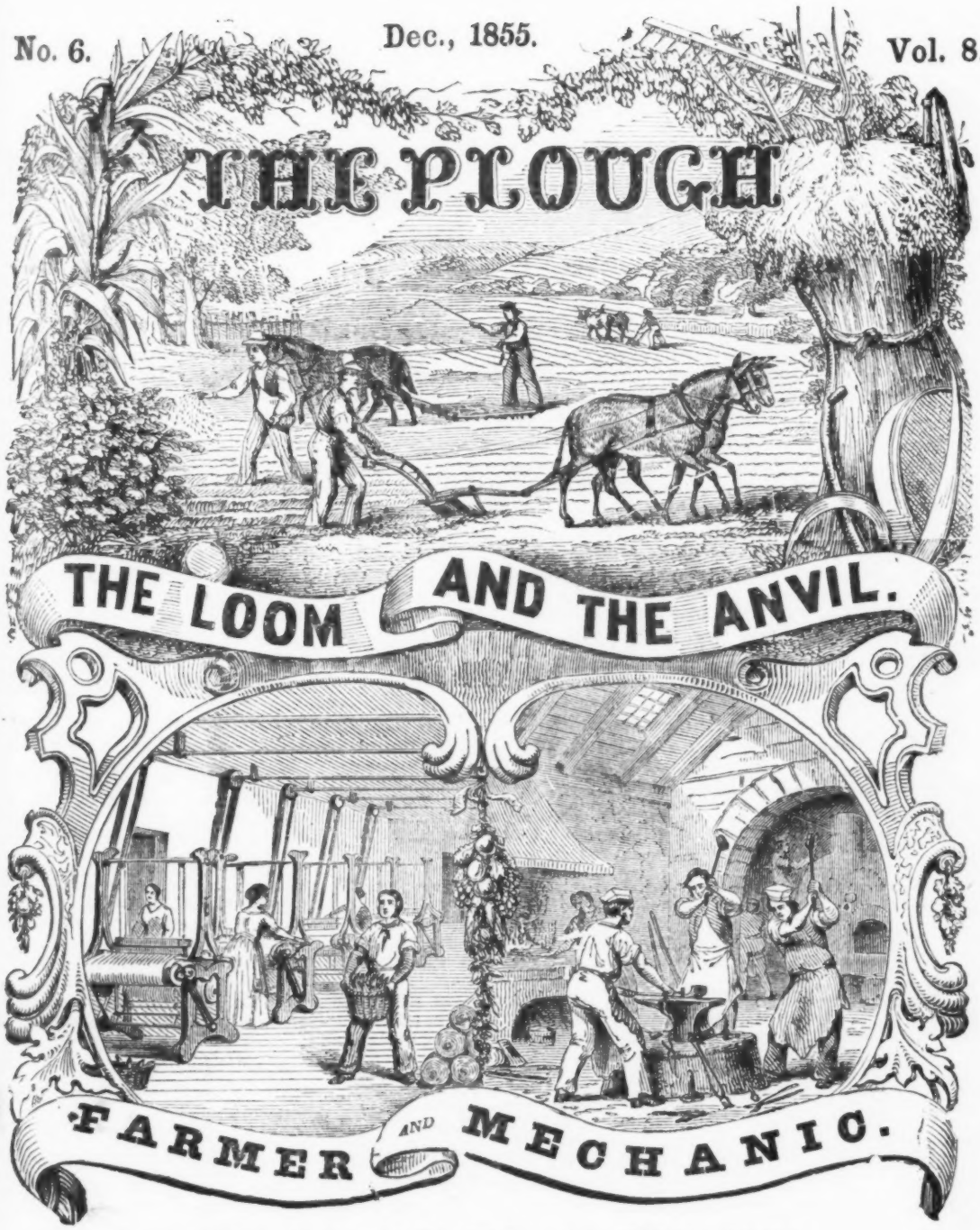
No. 6. Dec., 1855. Vol. 8.



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The Plough, the Loom, and the Anvil.

Vol. VIII. DECEMBER, 1855. No. 6.

"COMMERCE IS KING."—ITS CONDITION AND ITS RELATIONS.

In the preceding volume (p. 513, March number,) we presented our readers with a very concise view of the true meaning of this common saying, and illustrating why, and in what sense, the assertion must be regarded as true.

Commerce, in the popular sense of the term, is supposed to express only a portion, and a very small portion, of what really is included in that term, In fact, all trade is commerce. The purchase of an ounce of onion seed is as truly commerce as the freighting of a ship with a rich cargo to be sent across the ocean. As we said in the article referred to, foreign commerce, immense as it is, is estimated as only one-twentieth the sum total of commerce. There must, therefore, be some reason for the monstrous dimensions which "commerce," in its restrictest sense, exhibits to the eyes of the multitude. With many, a merchant is little less than a lord. Of itself, as a title it weighs almost as much as "prince."

Commerce, in its restricted meaning as trade across seas, has often been proclaimed as the foundation of a nation's prosperity. We wonder what the character of that commerce would be which had not an excess of agricultural or mechanical production to transport. In other words, we wonder what sort of a foundation it would furnish for a great and powerful people, if it had not a foundation in other home departments of industry on which it could itself be supported. It has always been the custom to talk very prettily, and even eloquently, on the importance of commerce, and this interest is immense and worthy of profound regard. But if every ship owned in the country were sunk to-morrow, the loss would not be felt so much as if the grass crop should fail for a single season.

Our commercial relations are extensive, and pervade all the departments of industry, and their destruction would be most deplorable. But let loose a horde of incendiaries, at midnight, who shall set fire to and consume all our factories of cotton and woolen goods, and the suffering and utter destruction of the hopes of multitudes that would result would be still greater. The capital invested in commerce is only about one-third of that invested in manufactures, and the annual product of our manufactures is nearly double that of commerce. We state this on the authority of the census of 1850, as published in Mr. Tucker's valuable analysis.

If every ship and steamer used for the transport of merchandize to any distant point, were consumed by fire this night, the havoc of property, though

terrible, would be much less than it would be were all our flocks and herds to die ere sunrise.

It does not follow, from the fact that a given interest is immense, that there is none greater. The world is full of immense interests, and the most prominent in the view of many, may be of quite secondary importance.

Commerce, when conducted on correct principles, is far more an index than a basis of prosperity. To call it "a foundation" seems scarcely less rational than to charge the occurrence of a cold day to the fact that our thermometers are graduated so far below zero. As well might you describe such thermometers as the foundation and corner-stone of the kingdom of Boreas.

Commerce is, or may be, of almost incalculable value to a community which has industrial resources by which it may be supported. But it can not create those resources any more than a bank can create capital, though both commerce and banks are of so great value as means of increasing the profits already acquired by successful industry.

A commercial man is not a producer, according to the primary meaning of the word. He is a carrier, a sort of middle man between the producer and consumer. The carrier may or may not own what he carries. If he does own his freights, he may thereby acquire a new source of power, but not as carrier. The *carrying trade*, as such, is not invested, either in fact or in fancy, with any peculiar honor or dignity. The mail carrier and the carrier of the richest silks both stand on the same "platform." Probably some of our express companies carry more value, and more concentrated value, than any foreign merchant. Hence, if any standard of that sort affects their position in society, then the express man is at the top, and the traveling agent of the company, who actually accomplishes this wonderful feat, should be at the head of his class. But such are not the artificial arrangements of society. The commercial class are the kings. Why is it so?

Foreign commerce requires capital, and wealth gives power. Theorize as we will about the matter, it is so, and it will be so. When wealth is controlled by a few, the few control the many. Wealth secures, or may secure, education, and knowledge is power. Nor is this all; for being educated they are naturally the associates of the members of the learned professions, and there is a common sympathy between them, growing out of this state of things. Here is reason enough for the influence exerted in many communities by these classes.

Again, these conditions are favorable for the exhibition of executive skill, of talent, and hence is an inviting field for the ambitious and the lover of display. Who but those, and such as those, are likely to exert a controlling influence over the affairs of a community?

There are wide sections of country in which the incidents of wealth and of education are not peculiarly characteristic of the classes above described. In such communities no such preponderating influence is possessed by them, but each falls into that rank which his own *possessions*, mental and material, naturally demand for him. There is then no magical charm in the name or the reality of one whose social position is determined by the fact that his business lies between remote points. If successful he is entitled to his full share of honor, though sound judgment and careful calculation will not always secure against ruinous defeat and failure. One may also do violence to good judgment and tolerable discretion, and yet, by some unknown concurrence of favorable circumstances, not at all taken into his account, may be successful. There is often injustice in the world's verdict, in these cases, whether of success or failure.

Often those who are engaged in these pursuits are owners of what they carry. But very often they are not in fact, even when they are so in name, for they buy on credit, and the only equivalent paid is a small piece of paper, "the *evidence*" of a promise to pay thereafter. Hence if the voyage is unfortunate, those who sold the goods to the "merchant" on credit are sometimes the real and the only real losers.

We have said that merchants are not, in the primary sense of the term, producers. True, the value of merchandise is increased by transportation. But the fact that transportation is practicable, gives value to all merchandise, and this increased value is received by the producer only under such conditions. This is almost too obvious to require statement. Hence there is no special sense in which the commercial class are producers, not also appropriate to all carriers. With increased facilities of transportation, heavy goods especially increase in value, and hence water carriage being cheap, it has an advantage over almost all other modes of transportation. This is the only point in which it, as a trade, has precedence over the express wagon or railway car.

Commerce often and usually tends to increase the market value of all kinds of productions, by extending the demand for them, and thus giving energy to competition in production. By connecting distant points of territory, it greatly extends the market area.

But sometimes the commercial class (we use the term in its limited sense) do a vast injury to society. They bring disorder into every department of enterprise. The past year has been one of those constantly-recurring seasons. There was a time when this, like other sorts of business, was based on the necessities of the times, and had real property for its guaranty, and was limited by the actual demand. Importations were made because they were needed, and the consideration paid for them was substantial. Now, the whole country is in an unnatural, unhealthy condition, in this respect. The entire commercial class, if called upon to-day, could not pay their debts. Men go into that business to avoid hard work, or to make money suddenly, and so becoming rich, to "retire." Thus they begin in poverty; but they can not secure the end they seek by doing business "in a small way," and hence they begin by taxing their credit to its utmost, and, if successful, all is well; and if not, they only fail and —— begin again. We came to the conviction, by careful observation and extensive inquiry, some years ago, that more than ninety per cent. of all who commence as "merchants" fail. And who are the ultimate losers? Farmers and mechanics bear quite their full share, though sometimes only in an indirect way.

Other forms of industry often lose through the agency of commercial men. We hear much of the influence of Lombard street in determining the price of our own productions, and so far as cotton is concerned, its price is and must be regulated in accordance with the foreign demand. This is a calamity forced upon us by the organization of southern society—manufactures and markets being studiously excluded. But this is not, in fact, the whole story. We are reminded of a very recent "panic" in which Wall street, that is, the whole city, was moved with consternation on the arrival of a steamer with intelligence of a money panic in London! Why? Because, in such a state of things abroad, Wall street would be called upon to pay its foreign debt, and then Wall street would become an utter bankrupt. This is the sad truth, and it is only one of the proofs of the rottenness of the present commercial system. Were farmers to practise upon the same principles of action, and to live equally on credit, there is scarcely a family whose es-

tates would not be wrecked within ten years, and the present arrangements of property, of competence and dependence, would be utterly reversed. We learned when a boy, that it was wrong to risk what might not be lost without ruining ourselves, and still more without injuring others. We still hold to this doctrine.

And what would be the consequences were Wall street to become bankrupt? Ask the widows and orphans whose all was wrecked in the recent frauds committed upon the New-Haven railroad stock. Ask the other hundreds of the same class whose whole dependence was annihilated or sadly diminished with the ruin of the United States Bank. Ask the tens of thousands whose whole or whose chief income is invested in stocks which have become unable to make dividends. It is by noticing transactions like these that we discover what connection there is between Wall street and commerce, and farming and mechanical interests.

Nor will any sane man venture on the assertion that these affairs are in a healthy condition, when panics are so easily raised and sometimes so ruinous, and more than this, of so frequent occurrence.

Who is alarmed at the news of an individual failure? Not he whose welfare is not thereby prejudiced. Not he who cares nothing for so trifling a loss as is involved in it. Why then such a panic as that to which we have just referred? For the reason that we have assigned, and no other. Their own business prospects are endangered.

Does any reader need other evidence to convince him that the commerce of this country is in an unsound condition, and that it is conducted on hazardous principles? Let him read the list of failures of large corporations or extensive houses for the last twelve or eighteen months, and we think he will be quite satisfied.

Does any one need evidence to convince him that there is connection between the transactions above alluded to, and the vain cry for WORK which filled all our cities and large towns and manufacturing villages the last winter? Let him not fail to note the unvarying relation which one sustains to the other. They are more than Siamese twins—it may rather be said to be "fit body to fit head." It is the seed and the harvest. It is the flower and the fruit.

We are not intending an attack on our "princely merchants," nor to raise prejudices between different interests, nor to excite jealousy among different sections of the social structure. But we see a tremendous evil occasionally developing itself in ruinous action, and we would call attention to the various symptoms, and have a wise jury of doctors explain its diagnosis and give us its pathology. We would know the truth, and avoid the evil and secure the good. We would have our producing classes fully understand the relations which they sustain to the commerce of the world, and how they can best defend themselves from the risks and actual losses to which they have hitherto been subject. We wish them to know exactly to what dangers they are exposed, and how the excessive or misdirected trading of other classes of society may have a hazardous connection with their own individual affairs, and how to provide suitable checks. Thus and then, after mutual counsel and discussion, systems and habits, principles and practices may be established, under the influence of which each may regard himself as comparatively safe, and thenceforth may avoid those terrible upheavals of the very foundation of commercial activity that have so recently and so seriously disturbed the quiet and deranged the business of every large community.

AGRICULTURAL JOURNALS.

If we may be allowed to say so, without incurring the suspicion of undue self-esteem, we do not think this class of publications are sufficiently appreciated. They encounter at the very outset the popular prejudice against *book farming*. We cannot undertake now to discuss the unreasonableness as we esteem it, of this prejudice, though we expect to have something to say in its behalf before the year is closed; suffice it at present to remark that it is certainly no valid objection to a good idea, that is found in the pages of a book or the columns of a newspaper, and an agricultural journal should be merely a repository of good ideas on the subject of agriculture. If erroneous opinions find their way into its columns they certainly are in the very best place to meet exposure; if, on the contrary, its teachings are correct, no better vehicle for communicating them to the public, than the pages of a newspaper can be found. Unfounded as this prejudice is, however, it is a general one, and every agricultural journal must encounter it; some to outlive it, many to sink under it.

It is a misapprehension of the mission of such a paper to restrict its objects to instructions in the arts of husbandry. The cultivation of our staple crops, the rearing of stock, and the improvement of the soil, are subjects of prime importance, but they do not constitute the exclusive material for agricultural journalizing. The social and commercial relations of the planter are no less important, nor less legitimate subjects of inquiry and discussion. The social statue of the pursuits in the family of professions, and not the relations of its individual members, is what we mean by the first; and by the latter interest, it will be at once understood that we refer to all that affects the trade in those commodities which are produced by the planter. It is the aim of an agricultural journal to place the planting community where its importance demands it should stand, among the first, if not the foremost, in the catalogue of pursuits; and it should not be less its aim to advise its readers of all that concerns the commercial value of its products. We make crops for the money which they yield, and our profits are not more dependent upon the skill with which we cultivate the soil, than upon the judgment with which we dispose of our productions. To this end it is as important that we should be advised by the influence which govern our markets, as that we should be informed of the principles which control in the cultivation of our crops.

It is regarded important that various other public interests should be represented by the press; why should it not be equally essential to the planting interests. The mercantile, the manufacturing, the professional vocations, all have their organs; have the agriculturists no common cause, no esprit de corps which demands public expression? It should be the aim of the agricultural journals to cultivate among their readers that community of sentiment—that feeling of brotherhood among those engaged in the same pursuit, which is thought to be so essential to the prosperity of other vocations. If they discover no new principles in agriculture, if they add no new instructions in the art of husbandry the presses devoted to the interests of agriculture will have done a great deal in giving dignity and respectability to the calling. When our fields are made the subject of study as well as

cultivation, when our country-seats are made the home of intelligence, and beauty, and refinement, a new and powerful element of prosperity, will be added to the agricultural pursuits. Our population will then become permanent, and men of cultivated minds will seek in the rural arts, the most congenial walks of life.—*Soil of the South.*

CULTIVATION OF WHEAT.

[This branch of farming deserves more attention than it has received, and a thousand mistakes are made in its culture as fatal as one described below. We find a capital treatise on the subject in the *Homestead*, by "a son of Connecticut," from which we extract the following, which we commend to the careful attention of our readers.—Ed. P. L. A.]

I was particularly struck with an essay in the first number of the *Homestead*, upon the cultivation of wheat, displaying a knowledge of that crop and its requirements, and a familiarity with the details of its management, which, however natural on the banks of the Genessee, would scarcely be looked for among the hills of Connecticut. As to growing wheat in your State, I have no doubt it can be done on many soils with the same expenditure of labor and skill which are necessary to its successful cultivation elsewhere.

Several experiments, it is true, within my own knowledge, have resulted in failure—but it it was only natural that they should do so—for they were made without any sufficient acquaintance with the peculiarities of the crop and the conditions of its growth and maturity. I myself, when a boy, assisted in one of these experiments. A rich dark loam, admirable for corn or oats, but rather too moist for rye, was for that reason sown with wheat. I think it followed corn and was got in in October. Any wheat-grower needs not to be told the result. The straw was black as the ground it sprang from, and the wheat was nowhere. A single well-matured kernel could not be found on the entire piece. In this experiment the sowing was a month too late, but that mistake only added a superfluous certainty to a failure already certain. No rich, moist, dark loam should ever be sown with wheat in Connecticut or any other State. Such a soil will always pay better in corn, oats or grass. But on that same farm, are warm, dry hill-sides, which I have no doubt might be made to produce forty bushels of Soule's wheat to the acre, or twenty-five of Mediterranean. Not with the same treatment—I do not mean that—for the same treatment would not be proper for the two varieties of wheat. For the Soule's I would select a suitable piece of ground in soil, manure it well in the spring with stable manure, which had been made and kept under cover—break up and cultiyate one summer in corn—the next summer fallow the corn stubble, the more it is ploughed the better, and sow in September. But that puts off the wheat till the next year. Well then, if I had no suitable land in cornstubble, and wished to sow the current year, I would select as before a piece of soil of some kind, but clover would be of course the best; manure in June and turn it under along with a good coat of grass; in August when the whole would be well rotted, intermix it all thoroughly by repeated ploughings and

harrowings and sow as before. Or, if I chose to plough but once, I would compost the manure, turn under a coat of grass in June—cultivate frequently during the summer—expending no less labor than in the former method, and at the time of sowing spread on the compost and harrow it in with the seed as before the drill. All of these three methods, especially the two last, are much practiced by successful wheat-growers in Western and Central New-York. A still better manuring would be to cowpen the ground, or best of all, to fold sheep upon it. Sheep, indeed, of themselves, usually select for their night lodges that portion of their range which is most dry and elevated, and therefore best suited to wheat.

Having prepared the land, as above indicated for Soule's wheat, it would be a mistake to sow Mediterranean. That would be likely to fail, and return but a light yield. Soule's wheat *must* have a dry, mellow, rich soil, (rich, I mean, in ammonia and phosphates, for an excess of humus is hazardous to any kind of wheat,) and then, with a favorable season, it will yield abundantly. The Mediterranean is less exacting in regard to most of these conditions, but it must not have a soil too rich; a maximum crop of this kind of wheat, not exceeding, I think, 30 bushels per acre, or about half the maximum of the other. The same corn-stubble which should be fallowed for Soule's wheat, would probably yield 30 bushels of barley or 60 bushels of oats, and then be all the better for Mediterranean. Which would be most profitable would depend on circumstances. Perhaps, after all, the best wheat for Connecticut would be the old-fashioned white flint; but I do not know where it can be found. This wheat grows with a slender straw and a long beard, on which the kernels are sparsely set and closely embraced in the husk, for which reasons it is not liable to sprout in wet seasons. I have had five hundred bushels of this wheat from 20 acres, and have known it to average as high as 30 bushels per acre. It will not bear much manure, as it lodges where Soule's wheat would do best, but it will grow and yield 15 or 20 bushels per acre on a thin soil, where Soule's would prove a failure. For quality this variety is superior to all others, holding the same rank among them that the Saxon does among other varieties of wool. But it has been supplanted by the Soule's and the blue stem, both in this State and at the West, just as when we were boys, Col. Humphrey's sheep were supplanted by the Saxons. I have inquired much for it for two years past, and I know of others who have done so. The best miller in this county (Wayne) has seen none since 1851, when he bought a sample of a neighbor of mine to manufacture some flour for the London Exposition.

But I am growing garrulous on this subject of wheat culture, and giving it a prominence far beyond your interest in it, or mine either, indeed; for this year I have sown no wheat. More money has been lost than made at the business in this State these three years, owing to the depredations of the midge or red weevil. And it is now well settled that no lands here are at present safe for wheat, with the exception either of limestone ledges, or deposits of sand or gravel and coarse drift. Fortunately there is considerable land of the former description west of the Genessee, and a large proportion of the latter, composed of limestone and sandstone pebbles, intermixed with loam, piled up often in ridges forty or fifty feet in height on this side of that river. On these warm quick soils, the wheat either comes into flower too early for the midge to deposit her eggs, or what is equally to the purpose, the grain matures so rapidly as to allow the young weevils little opportunity for mischief. This weevil, as you know, is a delicate little maggot, which sucks up the first sweet juices of the forming kernel, but has no means of

penetrating its toughening skin as it advances into the milky state. A single weevil makes little impression on a kernel of wheat; four or five reduce it to hen-feed; but fifteen or twenty are often found inhabiting a single gland. Those buds which are most safe from the attack of the midge are most liable of any to injury from the Hessian fly. But this insect does not inflict such sweeping destruction as the other. And yet it is almost incredible when we reflect that a single fly in its larva state is competent to destroy a stalk of wheat, but not less than one hundred weevils would be requisite to devour the product of that stalk.

A good many farmers in this region sowed rye last fall—some on clover soil which had been mowed, but more on oat stubble—and they have generally harvested about thirty bushels per acre. Things with us now point to the old Connecticut rotation of corn, oats, rye, and grass; and if prices remain where they now are, fifty bushels of corn, fifty of oats, and twenty-five of rye, succeeded by two or three good crops of grass, will not be bad farming.

Wheat is preëminently *the* crop of an interior country, because it always commands a higher price per pound than any other grain, and for that reason can better afford the cost of long transportation. But near the great markets this advantage disappears, or is even reversed; and I have remarked for years that the best grass lands of Oneida county, and the best wheat lands of Monroe, have been on a level as to price. Everything to its proper use is the true motto, and if a man's lands will pay the best profits in wheat, then he should sow wheat, though it be on the cobble-stone knolls in the valley of the Naugatuck. And for myself, I think if I were so unfortunate as to own any of those knolls, or any of the shrub-oak barrens along the Canal Railroad, I should investigate, in a practical way, the relations of guano and clover and wheat; but I will not deny a personal preference, along with S. N. G., to tend the sleek kine on the verdant slopes of Cream Hill, or in some green valley where a clear brooklet threads its way towards Lake Ontario, to watch the glad gambols of my calves, and my cattle, and my pigs, and my children.

[These suggestions, coming from an intelligent and practical wheat-grower, are quite to the point. They explain the characteristics of the different varieties of wheat, and by their practical details will enable our farmers to experiment intelligently upon its culture, Since the publication of the first article on this subject, we learn that here also the weevil is the worst enemy of winter wheat, and that many crops this season have been entirely destroyed by it.]

Movements of Produce Speculators.—We learn from the interior of this State that the New-York speculators are now going about the country for the purpose of buying up the potato crop, which, from all accounts, is unusually large. A farmer in Burling, Rensselaer county, a few days ago contracted with one of these dealers to furnish him with the product of five acres at ten cents a bushel. Other producers in the same neighborhood were unwilling to enter into a contract unless they could get one shilling a bushel. The speculators, no doubt, are obliged to dig the potatoes themselves at these low prices. At Ogdensburg, on Saturday last, fine potatoes were freely offered at one shilling a bushel.—*New-York Evening Post.*

FLOUR EXPORTS.

We have compiled from Treasury reports the following table of export and destination of flour from the United States. It affords a sort of chart of the direction which the flour export trade has taken at times:

Destination of flour shipped from the United States.

Where to.	1851.	1852.	1853.	1854.
Swedish West Indies,	5,315	8,050	2,301	600
Danish West Indies,	50,102	52,592	50,332	31,056
Dutch East Indies,	1,873	2,040	2,025	350
Dutch West Indies,	19,217	17,570	18,952	13,489
Hanse Towns,		38,635	1,735	11,686
Holland and Belgium,	594	14,660	925	26,980
England,	1,004,783	1,531,994	1,378,065	2,026,021
Gibraltar,	195	4,415	2,169	13,206
British East Indies,	1,600	3,506	1,194	544
British West Indies,	294,731	305,791	359,184	261,369
British American Colonies,	252,380	199,560	218,475	225,006
Australia,		10,464	177,325	79,416
France,		2,700	8,784	728,279
French West Indies,	7,902	7,652	7,901	31,259
Hayti,	43,867	42,902	50,421	56,121
Cuba,	5,511	17,200	1,537	11,608
Spanish West Indies,	2,285	7,949	1,967	6.070
Madeira,	7,006	8,287	9,200	4,360
Cape de Verds	838	835	277	4,721
Cape of Good Hope,		13,993	23,050	10,254
Mexico,	14,964	25,081	17,039	13,828
Honduras,	5,912	6,231	8,107	4,241
Central America,	2,573	5,670	2,789	2,332
Columbia,	47,477	53,257	43,881	42,097
Brazil,	374,711	345,025	433,843	316,419
Argentine Republic,	22,612	12,942	24,315	27,236
Chili,	4,327	6,836	10,870	3,859
South America,	200	1,480	9.644	356
West Indies,	4,079	765	1,650	
Africa,	5,430	9,993	6,838	3,533
Northwest Coast,	2,593	7,837	5,544	9,783
Other ports,	19,158	49,347	44,579	57,120
Total barrels,	2,202,335	2,799,339	2,920,918	4,022 386
Average price.	$4 77	$4 24	$5 10	$6 88

The return is for the year ending June 30, 1854. In that year, as in 1847, France was a good customer for flour; but England, as usual, took about half the whole. It is to be observed that the quantities sent to the West Indies, South America, etc., is in the aggregate about half, and it is what they *must* have. When there is an English demand to raise the price they must pay more. The above table embraces flour only. The aggregate quantity of flour and wheat exported in 1853 was, in bushels, 18,900,000, at an average of $1 12½, and last year it ranged 28,148,595 bushels, at an average of $1 55. The following table gives the aggregate export and official value, showing the yearly average for several years:

Aggregate export of flour and wheat from the United States.

Year.	FLOUR.			WHEAT.		
	Barrels.	Value.	Ag. value bbl.	Bushels.	Value.	Average.
1847	4,382,496	26,133,841	$5 95	4,399,951	6,049,350	$1 37½
1848	2,119,393	13,194,109	6 22	2,034,704	2,669,175	1 30
1849	2,108,113	11,280,582	5 35	1,527,534	1,756,848	1 15
1850	1,385,448	7,098,570	5 00	608,661	643,745	1 07
1851	2,202,335	10,524,331	4 77	1,026,725	1,055,732	1 00
1852	2,799,329	11,869,143	2 24	2,694,540	2,555,209	95
1853	2,920,918	14,783,294	5 60	3,890,141	4,354,403	1 12½
1854	4,022,386	27,701,444	6 88	8,036,665	12,420,172	1 55

Nearly all the wheat went to France and England. The above figures give, however, only the quantities of domestic growth exported. The following show the imports, mostly Canadian, and exported from bond:

Year.	WHEAT, BUSHELS.			FLOUR, CWT.		
	Imports.	Exports.	Excess retained.	Imports.	Exports.	Excess retained.
1851	1,237,856	184,107	1,053,749	586,379	312,925	273,454
1852	870,889	451,874	419,015	496,201	486,075	10,126
1853	862,295	605,931	257,364	517,931	461,326	56,605
1854	1,277,352	053,798	345,554	531,798	492,989	38,809
1855	2,196,650	1,097,113	1,099,547	777,728	616,206	161,522

It follows that, in 1853, about 1,400,000 bushels of Canadian wheat were imported and consumed in the United States, displacing as much of native growth which was exported.—*U. S. Times.*

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

AUSTRALIA AND AMERICA AS WOOL-GROWING COUNTRIES.

In a recent publication in Edinburgh, entitled, "The Emigrant's Manual—Australia and the Gold Digging," page 3, is the following paragraph:

"No country on the face of the earth seems to be so admirably adapted for the feeding of *sheep* and produce of *fine wool*. AMERICA, AS IS WELL KNOWN, IS NOT A SHEEP-FEEDING OR WOOL-GROWING COUNTRY. In Canada, and other northern parts, sheep require to be housed and fed by artificial means for several long winter months, while on the fine prairies of the States, the sheep which are left at large thoughout the year *do not yield wool of a valuable quality.* Australia, on the other hand, resembles Spain in its qualities for pasturage *in all seasons;* and its climate produces equally fine, if not superior, wool. At this moment *Australian wool* enjoys the highest re-

putation in England and America; it takes the lead in the market; and so readily and so profitably is it disposed of, that the cost of transport of 16,000 miles goes almost for nothing in the grower's calculation of profits. Most of those beautiful and soft woolen fabrics which go by the name of Indianas, Merinoes, and Challis, and in so great request by ladies in the shops of our haberdashers, are chiefly manufactured from this fine Australian wool."

Without fear of contradiction, we pronounce the above to be a tissue of misrepresentations. Nothing but gross ignorance upon the subject, or a propensity to disparage other countries, particularly the United States, when compared with England, could have induced the writer to assert that "No country on the face of the earth seems to be so admirably adapted for the feeding of sheep and produce of fine wool as Australia." What has become of Saxony, of Prussia, and Prussian Silesia, (not, at present, to speak of the United States of America,)—countries which are so universally and so justly renowned for their fine sheep and fleece, that it seems difficult to imagine that any one possessed of sufficient knowledge to write a book, to inform others, should, himself, be so ignorant of the subject of which he treats! He had better consult the treatise of his countrymen, Mr. W. Youatt, on sheep, (published in London in the "Library of Useful Knowledge,") before he again exposes his ignorance.

This celebrated veterinary surgeon informs us that New-Holland had *no sheep of its own*, but that, soon after the settlement of New-South Wales, a small number were procured from Bengal. These, he says, had large heads, Roman noses, and slouch ears; were extremely narrow in the chest, had plain and narrow shoulders, very high curved backs, tremendous long legs, and *coarse, hairy fleece.*

They next imported South-downs and Leicesters from England. But the South-down is, himself, a hybrid; his wool never measuring less than the $\frac{1}{1250}$ of an inch; and the Leicester is a *hairy* sheep.

The last attempt to stock Australia with this useful animal was by *importations from Saxony.* It has been said that these were *English* sheep, because they were taken *from Liverpool;* and so they were, but they were *selected in Saxony*, and taken to New-South Wales by the route of Hamburg, Hull, and Liverpool.*

And it would be strange if they should so much improve in Australia as to deserve the unlimited encomium that has been pronounced upon them, for, 1st, although our author, speaking in the most general terms, avows that "the climate of Australia resembles Spain in its qualities of pasturage," Mr. Youatt says it has one serious inconvenience, viz., that it is subject to periodical droughts; one of these, he says, commenced in 1826 and ended in 1829, that very little rain fell during the whole of that period, and that for more than six months there was not a single shower. As to the soil, he says that a considerable portion is productive, but an equal part comparatively barren. 2d. It would seem that the Saxony breed of sheep were not kept *pure*, but crossed with the other breeds, which is a great error. 3d. They will not compete in actual measurement with the microscope and micrometer. For example.

We have in our collection the following specimens of Australian fleece.

1. Marked Port Phillip, Australian, fine Merino wool. This measures $\frac{1}{1250}$ of an inch.

* See Howitt's two years in Victoria, with visits to Sidney and Van Dieman's Land.

2. Marked Botany Bay Colony. This is evidently a fleece of several year's growth and measures $\frac{1}{1250}$.

3. Marked $\frac{3}{4}$ Merino, Port Phillip, Australia, and measures $\frac{1}{1572}$.

4. Marked choice, fine Merino wool, Austin, Australia, and measures $\frac{1}{1875}$.

5. Marked fine Lancaster, Australian wool, and measures $\frac{1}{1875}$.

6. Marked Sydney, Australia, fine Merino, and measures from $\frac{1}{1875}$ to $\frac{1}{1250}$.

Whereas the fine wools of Saxony, Prussia, and Prussian Silesia runs as high as $\frac{1}{2184}$.

When our author asserts, roundly, that "America, as is well known, is not a sheep-feeding or wool-growing country," he leads us to believe that he has never been on this side of the Atlantic himself, and has taken little pains to inform himself from those of his countrymen who have been here. How came it to pass, if his assertion be true, that the Saxon-Merino sheep which, when transported to England, deteriorates, when brought into the United States, not only preserves his character, but sometimes improves. We have in our cabinet of specimens wool raised in Alleghany county, Penn., from a breed of Saxony sheep, which, at home, never surpassed in fineness of fleece $\frac{1}{2186}$, but here rose to the extraordinary fineness of $\frac{1}{2500}$. Captain McArthur, a zealous agriculturist, admits that the Saxony fleece deteriorates in Australia.

Against such a fact as this our author may swagger, and hector and scold till he is tired, but he "cannot rail the seal off the bond."

In Canada and other northern parts, where (he says) "sheep require to be housed and fed by artificial means for several long winter months," he seems to admit that they yield wool of a *valuable quality*. But Mr. Youatt tells us that the sheep of that colony are of the *commonest kind*, that there is a prejudice against them which is fostered by the mother country that her colonies may be as dependent upon her as possible, and her woolen manufactures find a ready sale there. We have one specimen of Canada wool in our cabinet which we have just passed under the micrometer, and find it measures $\frac{1}{1250}$ of an inch.

We recommend to our author, before he issues another edition of the "Emigrants' Manual," to examine a suite of specimens of wools of the United States which we recently sent to Mr. Solby, agent for the British Commissioners of the Great Exhibition of 1851, to be deposited in the Grand Universal Trade Museum in London.

But our author tells us, moreover, that Australia resembles Spain in its qualities for pasturage *in all seasons*, when it is perfectly well known that the most valuable breed—the "transtrumantes" or "migratory"—are driven several hundred miles, twice a year, in search of pasturage. *

What may be the reputation of the Australian wool, "at this time," in England, we do not pretend to know; but in America it does not enjoy "the highest," as our author, unwittingly, states.

In regard to the *fabrics* referred to in the article under consideration, which are in such great demand in the haberdashers' shops in England, manufactured (as it is said) from the Australian wool, we ask leave to remark that the *Indianas* are quite a coarse article, composed of *wool* and *cotton*, and, in regard to *Challis*, it is composed of *wool* and *silk*, and owes its beauty

* The Spanish word "*merino*" means "moving from pasture to pasture."
Spanish Dictionary.

and lustre to the latter material. Messrs. Levy & Co. gave us a specimen from which we obtained the filaments of the wool, and found that it measured only $\frac{1}{1575}$ to $\frac{1}{1875}$; the fibres of silk being $\frac{1}{2500}$.

PHILADELPHIA, Nov., 1855. P. A. BROWNE.

INSECTS INJURIOUS TO VEGETATION.

WE now continue our remarks on the order HEMIPTERA. But our first duty on this topic is to correct an important error which escaped the attention of the proof-reader in our last number.

The order Hemiptera is not divided into the two groups "Heteroptera and Hemiptera," but into HETEROPTERA and HOMOPTERA. On page 266 this latter word should be substituted for "hemiptera," in the paragraph numbered 2, as well as in the preceding paragraph explaining the groups into which insects of this order are arranged. We now come to the

APHIDIDÆ, or *Plant Lice*, which differ materially from those before described. Their bodies are soft and generally oval in form; are furnished at the hinder extremity with two little tubes, knobs, or pores, from which constantly exudes a sweet liquid. The head is small, beak long and tubular, eyes globular, antennæ long, body short, legs long and slender, with only two joints to their feet. Their upper wings are triangular, twice the length of the lower, and much longer than their body. They are also nearly vertical when at rest, like the sides of a steep roof. The female is sometimes without wing-covers or wings, while the wing-covers which occur are larger and more useful in flight than are the wings. Some of the Aphidians belonging to the genus *Psylla*, leap like the leaf-hoppers. But these differ from the Aphidians, inasmuch as the latter have large wings, covering the body like the sides of a steep roof, and which are also transparent. Their antennæ are long and threadlike, and tipped at the end with two bristles. At maturity both sexes have wings. Some females have piercers, with which they prick the leaves, depositing their eggs within the leaf. These wounds sometimes produce swellings or excrescences. These insects live in groups.

Aphides frequent every part of plants, from the root to the flower, and they multiply with great rapidity. They herd together in dense masses, often completely covering the more tender parts of the plant.

The tubes or pores before mentioned are a striking peculiarity, and their use is very singular, but explains the destructive character of such small animals. When the Aphid is well filled with the juice of a plant, by a spasmodic effort, he discharges a portion of what he has consumed through these pores, and as this is done in a sort of concert, by the whole group, the stems or other parts infested by these animals are covered with drops of a glutinous fluid, which become dark and appear like spots. It has been termed *honey dew*; but there is another secretion of plants, very different from this, more worthy of the name, to which it is also applied. The fluid discharged by these insects is greedily sought after by ants, who frequent the stems thus infested, and it is remarkable that while they destroy almost every kind of insect smaller than themselves, they live on good terms with the aphides, who neither seem to fear them nor to be annoyed by them. The aphides even have been known to make especial effort to yield drop after drop to a succession of ants in waiting to receive them.

Plant lice differ in form, color, covering, and length of horny tubes. The *Aphis Rosae*, or *Rose Louse*, is green, and has a little conical projection at the extremity of the body between the two horny tubes. These tubes are quite long.

Aphis Brassica, or *Cabbage Louse*.—This insect is covered with a whitish mealy substance.

A great variety of plants have aphides peculiar to their own species, as for example, besides those just named, are the *Aphis Salicis* of the willow, *Aphis Persicæ* of the peach tree, etc.

The *Aphis Lonigera* (of Hausmann) is a woolly louse sometimes found on apple trees. It is about one-tenth of an inch in length. When the down is rubbed off the surface of the insect it is found to be of a black color, except the abdomen, which is yellow. This insect is wingless. The punctures of these lice on the tender shoots produce a cellular appearance, and warts and excrescences result. The leaves turn yellow on the limb, and the disease spreads and the whole tree perishes.

For this insect, the application of spirits of tar and of turpentine, oil, soft-soap, urine, etc., are recommended. Scraping off the old and ragged bark and scrubbing the branches has proved successful. Tobacco is also a useful application. Rose bushes are often cleared of them by puffing tobacco smoke freely upon them.

Lady-birds, or the *Coccinella*, described among the Colleptera, are the natural enemies of this insect and destroy multitudes of them. The young of the *Chrysopa perla*, or lace-winged fly, are also louse destroyers. This is a pale green fly, with four wings resembling delicate lace. The genus syrphus, a two-winged fly, is another enemy of aphides. Many of these flies are black, with a yellow band on their body. They lay their eggs while on the wing, like the bot-fly, curving their tails beneath the leaves and fixing an egg wherever lice are discovered.

The young flies are maggots, thick and blunt behind, and tapering and pointed before. Their mouth is armed with a triple-pointed dart with which they pierce their prey.

By placing these natural enemies of the aphides upon a shrub or plant infested with them, it may be speedily cleared of them.

CARROTS FOR FEEDING POULTRY.

We find the following in the *Rural New-Yorker*:

"Eds. Rural:—I have never seen anything in your paper recommending carrots as food for poultry. I feed them to my fowls every day, and find it profitable to do so. In the present high prices of grain, etc., it is worth while for people to use any substitute that will answer the same purpose. I venture to say that those who have fed their fowls on carrots, chopped fine, will not readily discontinue the practice. The chopping is most easily done with a common sausage-meat cutter, costing about $3. These machines will pay their entire cost, in most families, in a single year, in various labor-saving ways. A couple of boys, in a single evening, could easily cut a barrel full

of carrots, which if fed to hens, mixed with meal, scraps, etc., would be worth much more than the same value in grain, at present prices.

At the conversational meeting of exhibitors at the last National Poultry Show, carrots were recommended for general use, as better than anything else for laying hens; "chemically considered," it was said "they contain more of the substance necessary to form eggs than any other food." One of the speakers went so far as to assert that one bushel of carrots contains more food than *a hundred cart-loads* of turnips. This may be a *few* cart-loads too many, but I think their value as an article of food for almost everything in the farmer's barn and barn-yard, or his family even, is not generally over-rated, else we should see more of them raised.

One reason, doubtless, why no more are grown, is the labor and expense necessary to raise a good crop. I think the usual method of raising carrots can be improved so that the crop need not cost more than one-half what it now does. In my own practice I have managed to dispense with a good deal of labor which I once thought necessary, and I still think there is room for improvement.

Possibly you may hear from me again on this subject. Farmers, now is the time to enrich your own minds and the columns of the *Rural*, by writing out your experience in farming, and do not forget to contribute your own mite, while profiting by the contributions of others, remembering that "the withholding more than is meet tendeth to poverty." W. C.

THE SUGAR GROWTH IN LOUISIANA.

A FRIEND in New-Orleans writes as follows: I wrote you yesterday. I resume the pen to-day to correct a gross error which has crept into your September number. At page 353 it says: "*and in the year* 1765 *there was sugar enough manufactured for home consumption, and in* 1770 *sugar had become one of the staple products of the colony.*" Where the author got his authority for so stupendous an assertion the ghost of Munchausen alone can tell, if summoned by the spirit rappers. There was not a pound of sugar made in the colony at the time mentioned.

Judge Martin, who came very early in Louisiana after the cession, and who had the best means of information, for he could get it from a large number of men who were personally acquainted with the state of the colony in 1765 and 1770, thus writes on the subject in his history—page 125, 2d vol.

"Since the year 1766 the manufacture of sugar had been *entirely abandoned* in Louisiana. A few individuals had, however, contracted to plant a *few canes* in the neighborhood of the city. They found a want for them in the market. Two Spaniards, Mendez and Solis, had lately made larger plantations. One of them boiled the juice of the cane *into syrup*, and the other had set up a distillery in which he made different *taffia*."

A *few canes* for the market—*syrup, taffia*—but no *sugar*, as you see.

The same author continues: "Etienne Boré, a native of Illinois, who resided about six miles above the city, finding his fortune considerably reduced by the failure of the indigo crops for several successive years, conceived the

idea of retrieving his losses by the manufacture of sugar. *The attempt was considered by all as a visionary one.* (Why visionary, if good sugar had ever been made in the colony?) His wife, (a daughter of Destrehan, the colonial treasurer under the government of France, who had been one of the first to attempt, and one of the last to abandon, the manufacture of sugar) remembering her father's ill success, warned him of the risk he ran of adding to instead of regaining his losses, and his relations and friends joined their remonstrances to hers. He, however, persisted; and having procured a quantity of canes from Mendez and Solis, began to plant."

This was written at a time when instant contradiction would have been given to the author if he had, in the slightest degree, swerved from the truth.

At page 131 the same author observes: "Boré's success in his first attempt to manufacture sugar was very great, and he sold his crop for twelve thousand dollars. His example induced a number of planters to plant cane."

The fact is, that before Boré's success a sort of thick sweet paste had been made in Louisiana, but no sugar—at least what we now understand by the word sugar. The reason was that the juice of the cane did not *granulate.* My grandfather, Mr. Boré, was the *first* who succeeded. See page 349 of History of Louisiana, 3d volume.—CHARLES GAYARRÉ, *in De Bow's Review.*

HEMP.

THE cultivation of hemp prospers most in northern latitudes, producing a heavy and elastic lint, which adds to its strength and durability.

The production of this article in our country has reached a high limit. The demand for home consumption and exportation keeps pace with its growth.

The manner of growing and preparing it for market is simple. The land should be ploughed down in the fall to get the winter freezes, and when the ground will permit in the spring it should be cross-ploughed and well harrowed. The seed is sown broad-cast, about two bushels to the acre, after which it should be brushed and rolled in.

The earlier hemp is planted the more valuable and successful is the crop. Hemp is a plant which, after arriving to a certain height, supports itself in its growth from the atmosphere. It does not impoverish the soil as other plants. A sandy, loamy soil is best calculated to produce a good crop. Good bottom land will answer. It is known that land which has been in seed for a length of time will produce hemp for twelve years in succession. At the expiration of that period, if sown down in clover and left standing three years, it will produce for nine years longer.

At an early period the mode of preparing it for market was to pull it up by the root, and also to cut it with a hook-shaped instrument, each of which processes was very laborious. In late years an improvement has been made by the use of the cradle, which reduces the labor. The mode of preparing it after it is cut is as follows: It is bound up into sheaves and thrown into shocks. For water-rotting it should be kept from exposure to the weather,

which tends to discolor it, and thereby reduce the value. The process of water-rotting is to immerse it in pools of standing water, or so constructed as to allow the water to pass in and off, as occasion may require. The hemp should remain in the pool until the stalk becomes saturated. When this is finished the stalk will break short off, or the mucus, which holds the lint to the stalk, will become macerated, and rise on the surface of the stalk.

The time occupied for this process will require, in the months of August and September, from four to six days. It should then be taken out of the pool and spread thinly down on the ground. After drying it should be thrown into shocks, well secured at the top to prevent the weather from penetrating the center, and should remain in that condition until the frosty weather arrives, to allow its breaking out. Various modes for breaking it out by machinery have been used, but the most general is the hand-break.

The dew-rotted hemp is spread on the ground in the months of November and December, and remains so until, from the effects of the dew and rains, the stalk becomes brittle and relieves the lint, which is then taken up and thrown into shocks, and afterwards broken out.

Hemp growing is profitable, being an immediate crop, which does not interfere with the general duties of the farmer, or with his attention to other crops. A crop of water-rotted hemp is double in value to a dew-rotted one. The expense in preparing the former is not more than twenty-five to thirty per cent. over the latter.

Hemp will generally command the cash and a ready market. The average yield to an acre is about 800 pounds. For water-rotted, the price at the farmer's door for a good quality, in ordinary times, is eight dollars per 112 pounds, or for dew-rotted ranges from four to five dollars per 112 pounds.

D. M.

THE AURICULA.

About the middle of March, if the weather is fine, the trusses will be getting sufficient forward to select those intended for exhibition. Seven pips are the lowest number allowed by our Metropolitan Societies; therefore select the most promising, containing that number and upwards. Those with round buds, and nearly of a size as possible, the truss also round and compact, should be particularly selected, and if there are any monster pips among them with large oblong tubes or other deformities, remove them while young. At this stage of their growth, care must be taken in watering that none be allowed to fall into the tubes or pipe, if it happen to be exposed, as is the case with some varieties; for although the buds be so young, the meal of the eye may be formed, and if so the water will run the meal over the ground-color, and when the blossom is expanded it will be found dull and unfit for exhibition. The mealy-grass varieties require a little extra attention, for their beauty is much increased by preserving the white powder on their foliage. To obtain this object without drawing the plants more than possible, I nail a strip of wood on each side of the center bar of the frame, of sufficient width to shelter them from rain, and place the plants beneath it. By this means they enjoy a free circulation of air and light till in a proper state of forwardness to remove under the hand-glasses, or on the stage.—*L., in Gardiners' Chronicle.*

THE PROPER USE OF GUANO.

HOLLIDAY COVE, VA., Nov. 11, 1855.

"DEAR SIR:—I take this opportunity of addressing you a few lines. I feel anxious to try an experiment with guano, and notwithstanding I have been a subscriber to *The Plough, Loom, and Anvil*, I have not been able to obtain the information I desire. I wish to know how much to apply to the acre, how and when to apply it, to the best advantage, on wheat now growing. The soil on which I wish to make the experiment is a sandy and gravelly loam. I have been a reader of *The Plough* since its origin, and feel a deep interest in your success. Please give me all the necessary information on this subject through your next number.

"I remain your most obedient servant, S. N. C."

WE are very happy to reply to our friend's inquiry. If he will turn to p. 19, of vol. 6, that is, the number for July, 1853, he will find a statement of some very satisfactory "experiments with guano;" and also pp. 27, 28, of the same number. Again, in number for June, 1854, other very useful experiments are detailed at length, p. 725. In December No., 1854, p. 370, "plaster and guano for cotton" were applied in stated quantities, with remarkable results.

In our 7th volume, page 93, we copied Com. Jones's valuable statement of his use of several manures, and the results of each, and among these is guano. In the same volume, p. 223, we gave concise directions as to the use of several manures, and among these of guano.

But after noting all these references, from which much may be learned respecting the use and the results of guano, much more may be said; and it will no doubt serve a useful purpose to many of our readers, to give further formal and specific directions on this important subject.

Guano may be used in various ways. Seeds may be soaked in a solution of it. It may also be used as a top dressing to grass, and to hilled crops. It should then, like all top dressings, be scattered broadcast, either finely comminuted and sparingly used unmixed or, still better, mixed with other useful substances. 250 lbs., mixed with ten times its weight of peat, muck, or rich mould, per acre, sown broadcast, will generally be sufficient. On poor soils 300 lbs. may be used, whatever form of application is adopted. Where it is practicable, these applications should be covered by passing a harrow over the land, or even a plough, and just before a rain.

It is generally unsafe to apply guano directly to the tissues of a plant. Peruvian guano should never be so used. It is injurious both to stem, leaves and root. The other guanos may be thus applied in moderate quantities without danger, although it is not the best use of them.

In heavy soils, or with a clay subsoil, it is well to plough in guano in the fall, the process being repeated also in the spring. It is better to use small quantities often than larger quantities at once.

In gravel and sandy soils, without a clay subsoil, ploughing in is unwise, since the rains will dissolve and dissipate it.

When applied to growing crops, as wheat, it is well to dissolve a quart of guano in a barrel of water, and thus to irrigate the soil. In this form it is perfectly safe. Or it may be broadcast, as already stated.

When applied to growing corn and other hoed crops, 100 or 200 pounds

per acre may be scattered around the stalks, (carefully avoiding contact with them if Peruvian or other variety rich in ammonia is used,) and then it may be covered with the plough and hoe.

When applied to trees or vines, it is found of great efficiency. When young trees are to be transplanted, large holes should be dug, and around their circumference guano to the amount of ¼ or ½ a pound should be scattered, and then covered a few inches with good mould. The roots of the tree should then be laid above this mould, and the hole filled with light soil. If the tree or vine is fixed in its soil, the earth may be dug around the trunk, in the spring, and guano be scattered in, and then thoroughly watered.

Guano may be mixed with common salt and soot in equal quantities, and with ten times its bulk of vegetable mould, muck, peat (rotted), marl, etc. But it should not be used with ashes, lime, or other crude alkalis, as the ammonia it contains *might* thereby be dissipated.

LIQUID MANURE FOR THE GARDEN.

Permit me to offer a few remarks on the valuable effects that night-soil, when reduced to a liquid state, has upon the various productions of the garden; and not a few of your readers will be aware, manures are of no use to vegetation until they are dissolved in water. When, therefore, liquid manure is used, the cultivator has less trouble, and at the same time he is applying a substance in the state in which plants can best receive it and derive most good from it.

For some years past I have been in the habit of using this description of manure to a considerable extent, and have found the results to be very beneficial; besides it prevents the necessity of applying such quantities of manure in a solid state. At the end of the season I make it a rule when turning up vacant pieces of ground to the action of frost, to lay upon the exposed soil some rotten manure, adding a considerable portion of vegetable refuse reduced to mould for such purposes. This mould is obtained by taking all the refuse possible from the garden, throwing it into a heap to rot, and turning it two or three times during the summer. The decomposed vegetable matter is admirably adapted for the growth of plants for culinary purposes.

During the winter I go over the ground intended for the Brassica family, pouring on a large quantity of this liquid, in order to allow the winter rains an opportunity of washing it down, so that the ground is greatly benefited.

The above is also applicable to gooseberry and currant bushes. I have a large basin made round the root of each, and about the end of November I apply two large pans full of the liquid to each plant; afterward I level in the earth that had been previously taken out for the purpose of forming the basin.

About the end of January, after the bushes have undergone their winter pruning, they again receive a similar supply before commencing to put the ground in neat order for the season. Raspberries and strawberries are also greatly benefitted by the use of this liquid. In applying it to raspberries

the method recommended for gooseberries is suitable, and where it is applied to strawberries it increases the crop two-fold. Mr. Rivers strongly recommends it for roses. He says: "I have found night-soil mixed with the drainings of the dunghill, or even with common ditch or pond-water, so as to make a thick liquid, the best possible manure for roses, poured on the surface of the soil twice in winter, from one to two gallons at each time. December and January are the best months; the soil need not be stirred till spring, and then merely loosened two or three inches deep with the prongs of a fork, for poor soils, and on lawns, previously removing the turf. This method I have adopted for several years, and found it most efficacious."

When night-soil is not to be got, I take as next best cow-dung made into a thick liquid of the consistency of porter, and apply it in larger quantities than when night-soil is employed.—JOHN FLEMING, *in Agriculturist.*

DOCKING, OR AMPUTATION OF THE TAIL OF THE HORSE.

BY J. GAMGEE, V. S., LONDON.

MAYOR, the simplifyer of human surgery, a title as grand as it is expressive, says in his preface: "We must deplore the patients of those practitioners who are satisfied with what exists, and who make it their duty to remain faithful to eruditely exposed traditions, to learnedly introduced usages, and to habits scientifically erected into doctrines, for the exercise of our beautiful profession, and for the greater good of suffering humanity."

"Simplex sigillum veri,"

words as indellibly engraven on our minds as they are on the stone under which lie buried the ashes of their immortal author, Boerhaave, are those which sum up the doctrines to guide us in the practice of surgery. We have been born to venerate such an adage, and if it may seem that the subject chosen to promulgate our views be not a happy one, we trust to convince our readers that, enemies to barbarity and lovers of progress, we are Mayor's disciples, and pilgrims to Boerhaave's shrine.

The consultation of most veterinary works, English or Continental, and the practice we have seen adopted, *here and abroad*, to cut horses' tails off, have afforded us abundant and undeniable proof that "it never consisted of more than the cutting off a portion of the stump with brute force, and the cruel application afterwards of a hot iron to the small artery of the tail."

My father, Mr. Joseph Gamgee, who, for the last thirty years, has been in the habit of docking horses, here or in Italy, has learned by his long experience that the best mode of performing the operation is as follows:

A groom walk's up to the horse's head, standing in his stall—for it is best not to disturb the animal—whilst the tail is prepared. This preparatien is merely the separation with the tooth of a comb, or a probe, or simply with the fingers, of the hairs at the part where the tail is to be docked. The line of demarcation, by the separation of hairs, is then made perfectly distinct by the latter being properly tied upwards and backwards. The groom then

holds up the near fore-leg, and an assistant holds the tail straight out behind, and with a *methodical* closure of a *sharp* docking-iron, the horse loses the end of his tail without perceiving it; the only movement generally effected is that of bending his back and momentarily shrinking. Never will a horse attempt to kick. His foot being now let down to the ground *he has to suffer no more pain*, the ligature which has fixed the hairs is undone, they are allowed to fall in their natural position and then tied together *below* the stump, rather closely up to it, but not over it, and drawn as tightly as will admit of its not slipping off unless pulled away. The morning after the operation the tail is loosened, the clot, or eschar on its cut surface, is not looked at or interfered with, the outer hairs are carefully combed out, and the drops of blood which have dried on them cleared away, and the horse is ready to go to his ordinary work.

We have a splendid lithograph in our portfolio, which strikingly depicts the barbarity and danger attending the use of the actual cautery in this operation. With blinds over the horse's eyes, a side line on his leg, a stout farrier's twitch on his nose, and a halter on his head, the sensible and frightened animal is pulling back, excited and furious, nearly sitting on his haunches, whilst the *red hot ring of iron* is being applied to the raw stump, previously powdered over with resin. The smoke and odorous fumes are blinding the operator, who is in as awkwark a fix as the poor horse himself. The print we allude to, although a masterpiece, but faintly represents the reality; and, as I was one day mentioning my father's practice to a veterinary surgeon, he exclaimed, "Ours is certainly dangerous work, and with the best care assistants or operator stands a chance to have their brains knocked out." I must mention that this was preëminently a practical man, and all practical men, here or abroad, have until now seared in docking; at least so far as we have learned, with one exception. And it is also a practical, as well as scientific man, for whom we have the greatest reverence, that said he had been in the habit of tying *over* the stump, and securing some tow between the hairs, but the practice was not found to answer in all cases. My father has often told me that he has often heard of persons tying *over* the stump, and thus inducing gangrene of one or more joints of the tail, for the pressure requisite to stop the coccygeal arteries in this way is considerable; whereas, when the hairs are tied *below*, it is the *natural hæmostatic*, consisting firstly in retraction of the and formation of a *temporary clot*, and secondly of a *temporary plug*, that comes into operation.

We have seen tetanus resulting from docking by the usual method, and heard of several cases of sloughing away of several of the coccygeal bones. We are well aware that a simple prick may cause tetanus, but it is rather strange that to my father such accidents are unknown, because the healing by granulation, under a natural eschar must be more in order than the *separation* of what has suffered by the hot iron, and *reparation* by exuded plastic lymph.

If simplicity is the undeniable seal of truth and humanity to be held in view by all operating surgeons, then there is no doubt that a clean cut is no severe operation, and tying of hair unassociated with difficulty or sensation. Some persons may say it is most humane to leave tails as they are; so it is, but men will have their horses docked, because in the sight of the world a horse with three inches taken off the end of his tail carries it better, and it looks lighter. We have heard horsemen of all kinds repeatedly say, "that horse will be all the better for having a little of his tail off," and we could not but agree with them.

But, lastly, some diseases may necessitate amputation of the tail. We admit this is extremely rare, but we have had to do it ourselves, and not only in the horse, but have seen it resorted to for a peculiar disease of the coccygeal bones in cattle. In the ox we are aware that nothing can answer better than the actual cautery, and as the operation is as rare as amputation of one of his extremities, we think it of little importance; but in the horse, had it to be performed only once in a practitioner's lifetime, the simplest and best mode should be adopted; just as if a veterinary surgeon were called upon to tie the carotid or the femoral artery, or to perform the Cæsarian operation, he should be expected to do it as a man of science as a surgeon, and not empirically, as in the days of yore.—*London Veterinarian.*

PONIES, HORSES, ETC.

"WHAT IS A PONY?" This question, it would seem from the above extract, came up again in Boston. In the mind of any one who has considered the subject, there can never arise a question. From the *Journal of the U. S. Agricultural Society for* 1854, we make the following extract.

"Applications having been made to the Executive Committee at the National Exhibition of Horses, (at Springfield, Mass.,) by owners of animals for the transfer of such animals from the class of geldings, in which they were registered, to that of *Ponies*, it became necessary forthwith to decide for the purposes of the present exhibition, what points should be regarded as constituting a pony. A committee of five was accordingly appointed by the President to consider the matter and report thereon without delay. This committee reported the following decision:

"'The committee finally determine, and recommend to the National Agricultural Society to publish as their opinion, that no animal of the horse family should be termed a pony which does not bear the distinctive marks of that breed—that is, a heavy body, short head and legs, stout neck, with heavy mane and tail, and not over 14 hands high; and that in all offers of premiums for this breed of horses, pure pony blood should be taken into account more than size and height; and such crosses of that breed with those of a large growth as comes the nearest to the original idea of a Pony, for which the Shetland should be kept in view as the type of the race. Those not possessed of the distinctive pony marks, whatever their size, should be ranked as *small horses,* and *not as Ponies.*'"

This report of the committee is not so awkwardly expressed that the idea is not discernable, and the distinctions pointed out are important to be borne in mind. The editor of the *Journal* says, moreover, "The call for a committee was rendered necessary, and the discussions that preceded and followed this appointment were caused by the fact that in some sections of our country —New-York city for example—horses of 14 and 14½ hands in height are invariably termed "ponies." Hence many had the impression that their horses of that height, though possessing no pony blood, (strictly so called,) could properly be classed as ponies. Hence, also, a native of New-York, when appealed to for his opinion as to "*what height* shall constitute a pony," promptly replied, "fourteen and a half hands and under."—*The Homestead.*

We have extracted the foregoing from our exchanges, and being quite sure that the gentlemen of this committee erred in their judgment, we have been led to ask an opinion upon the question therein involved, from one whom we are sure is quite able to give the necessary information. The response is contained in the article below, which we leave to commend itself to our readers. But it may not be amiss, here, to give a little space to explanation. In our April journal, 1855, we gave an extract of some remarks on shoeing horses—a much neglected art—in which we premised that this was a subject we knew little about, save that it was an important one, and one in which others are as ignorant as ourselves; but that we gave "place to a writer in the New-York *Courier*, who seemed to understand, at least, something about it, and who had had "an experience of twenty years in the British Cavalry, though in what capacity we are not informed." We are now satisfied on this point, and have thought that in presenting the article below, from the pen of the same writer, Captain Ralston, of the British army, we may very properly observe that on subjects relating to horses, and to that second most important of the domestic sciences, veterinary medicine, he is thoroughly versed. His own words, used to us in consequence of this remark, though at the time expressed in a half playful way, may, perhaps, best set forth this fact, and as it may be that veterinary science, the art of horse-shoeing, and kindred subjects of practical and everyday moment to the agriculturist, stock-raiser, and horse-owner, may be treated of in our journal by this writer, we are the more disposed to introduce him to our readers in his own words, used as already stated.

"I *ought*," says he, "to-know more than merely 'something' about these subjects. My grandfathers were engaged in Scottish farming and stock-raising, and the cultivation of my taste for the domestic animals commenced very early. To become a contractor for horses and forage to cavalry regiments, was a bias which withdrew my father from the professional career of law; and a stable, horses, and a horse's back, thereby, was almost childhood's domain. I entered the army as a cornet of dragoons at fifteen years of age; and that arm of our service, my regiment, and soon after a command of a troop, gave me wide opportunity. Breeding, possessing, and training race-horses, and riding and hunting as much as most men, (the English inference from this latter would be comprehensive) have all contributed to practical pretensions; but my true claim and avouchment is founded on being a graduate of the Royal Veterinary College, member Royal College of Veterinary Surgeons, etc.; and that I have been in Veterinary charge of Royal Regiments of Cavalry, which includes the surveilance of the whole stable economy, hospitals, forges, the control of the farriers, etc. I have likewise been in veterinary departmental charge of the cavalry and horse artillery of one of the divisions of the army of India. From extended opportunities, then, I may assume and frankly say that I ought to know more than merely 'something' of shoeing horses." Such most surely is the full conviction of the

EDITOR OF P. L. AND A.

PONIES; AND "WHAT CONSTITUTES A PONY?" AND SOME INCIDENTAL REMARKS UPON HORSES.

BY CAPTAIN RALSTON.

The poet's line that "a little learning is a dangerous thing," has acquired well nigh the dignity of an axiom; and, mayhap, this doctrine underlies all the curious perplexity which seems to have beset the question of "What constitutes a Pony?" Individuals, and as well associations, would appear to

have been seeking this inquiry as if it contained some profound mystery; ignoring all the while any reference to the native source and signification of a familiar technical term.

May the writer, then, crave some little space in your columns—or a corner, so may it please you, Mr. Editor—for this, his essay to "fix" the "questio vexata;" and at the same time may he bespeak that indulgence by venturing to add with how much of appreciation and respect he has noted the aim and scope of your journal. *The Plough, the Loom, and the Anvil* presents a worthy combination, a laudable triad of subject-interests.

Occult as "What constitutes a Pony," seems to have been considered, still that the term Pony means a small individual, or class, of the division of the equine family, the Horse, can have been small mystery? Yes—but *how small?* Therein lies the sum of the whole question, the gist of the complicity; and to directly answer, leaves room for but few words; whereupon an editorially grim "verb. sat." may step in and cut short the further thread of this fragment of equine lore. Well, the answer is, "13 hands high, and under;" or, in other words, a Pony is an animal of the genus equus, not exceeding 52 inches in stature.

At no time had the term pony any reference to form, and far less to those extraordinary "distinctive marks," predicated by the Committee on Horses, at the exhibition of Springfield, Mass., held in 1854. So far from the ungainly large head and heavy body being characteristic of the Shetland Pony, ascribed as "the type of the race," that is an animal of very small size, of beautiful symmetry, with an Arab-like head. The whole conclusions of said Committee the writer respectfully dissents from, and protests against. They are in utter violation of all foregone conclusions upon what constitutes a Pony. Neither in fact nor imagination, do they typify the class. What *are Ponies* but *small horses!*" A fine pony will be well proportioned, and symmetrical, in like manner as a fine horse. In certain local circumstances this small breed is suitable and valuable; in many other instances it is convenient and ornamental; and in its limited size are almost always seen combined extraordinary comparative powers of activity and hardihood. Where it is found worth while to encourage its cultivation at all, it is desirable to do so in the same manner as should ever be the case in seeking to improve horses; that is, to foster those just and elegant proportions which confer superiority of form. The principles of the science, or those laws which ought to regulate Breeding horses, may be comprehensively reduced to a very few words, namely, "Like begets like." In the Mare, for the breeding of horses for all general purposes, let sound constitution, eyes and limbs, together with goodly form, should be sought for. In the Sire seek fine form; but let nothing compensate for the absence of pure or full blood. From good form of sire and dam, more particularly the latter, well fitted and adapted *structure—the animal machinery*—is derived; while from the brain, and fine texture of the tendons and ligaments of the blood horse, are derived those superior energies and powers of endurance so invaluable—*the motive power*. In other words, his higher physiological conditions confer not only enhanced beauty of form, but increased vigor and endurance. Moreover, for all *fast work*, the qualities of the fine skin of the Blood horse are of supereminent advantage, being equivalent to another set of lungs.

But to return to ponies. Let the pony be, as heretofore, an animal of 13 hands, and under; while to discriminate the other variety of small horses, those between 13 hands and 14½ hands, let them, as heretofore, be called "Nags;" and let the horse, proper, be all animals above 14½ hands. Why

unsettle everything, and settle nothing, precise or clear, as to the past and present tense of pony-height and ponyhood.

The small stature of ponies, conversely, but in like manner with the great size of the English dray horses, or of the Flemish breed, has been mainly influenced by climate, soil and food. The rich Fen (once marshy) counties of England, and the now fertilized marsh lands of Flanders, have developed these large, heavy breeds; while in hilly and mountainous localities, and tracts scanty and bare of pasture, are found the pony breeds. The domain of the Arab is on plains; but, except on the here and there Cases, these are dry and arid, and the Arab is almost a pony; for the pure Arab of the desert is usually about and often under 14 hands.

It is, however, the Anglo-American pony that is under discussion. The Anglo-term, pony, has become absolute in significance, and is now one of universal acceptation, to denote any horse 13, or less than 13 hands in height. There is another term—that of Galloway—which has been applied to horses above 13 hands, and not exceeding 14½ hands. This term, however, has never attained that currency which pony has. It is, like the term Sheltie, of Scottish local origin. Sheltie designates the already adverted to, very small animal, of the race of the Shetland Isles; and Galloway an offshoot of similar descent, but enlarged to about 14 hands, or so, by the more genial climate, and in the more sheltered and fertilized districts of Galloway, in the southwest of Scotland.

The so frequently fine forms, and enduring action of these two races, have been ascribed, and no doubt truly, to Arab or Barb ancestry. The Spanish Jennetts had been so descended; and when a part of the memorable Spanish Armada—that vast and so-called invincible fleet, destined for the subjugation of England, in the olden time of Queen Elizabeth—was wrecked off the western coasts of Scotland, many of the horses on board these ships swam to the shore, and thence the native pony breed became crossed with that famous oriental blood, which ever confers and leaves behind so much of enhanced form and qualities.

In no manner, perhaps, can it be more forcibly seen how climate, food and shelter operate in conferring or denying size to animals, than by looking at the variety of the equine race, seen in the diminutive Sheltie, and the large, powerful blood horse of Britain. They have a common Arab or Barb origin; but the one is from 7 to 11 hands in height, and the other usually attain to from 15 to 16½ hands. This fact is replete with elements of useful reflection for the intelligent and prudent farmer and raiser of stock. In the case of animals intended to be fattened for market, and where size and early maturity involve important economies, there would be wide room to enlarge here.

To exemplify how absolute is the anglo-application and understanding of the term pony, an anecdote may not be inadmissible. The writer possessed a pony, behight "Little Harry, Mickle Hurry," that had rare qualifications of speed and endurance. He was entered for a pony stakes, for which several noted ponies were to contest. Little Harry was unknown—in racing parlance was a "dark horse"—and his entry was looked upon as of no account; but on his winning the first heat in a canter he was at once challenged as over pony height. The stewards thereupon caused him to be placed under the standard and measured; whereupon he was pronounced 13 hands and some 2 to 3 lines of height, and declared excluded from starting for a race as a pony. The challenge, however, not having been made *before* the heat was run, the second pony was not allowed to claim, and the race was decided to be run over anew. Like most ponies, Little Harry had

hard and strong hoofs; and this enabled his plates (light shoes used in racing) to be taken off, and the rasp to be applied to reduce the depth of his hoof, so as altogether to bring his height down some 4 or 5 lines. At the signal for saddling and weighing, he was again got ready, and to the surprise of his competitors appeared at the post; started under protest, and again won the heat; but this time, on being placed under the standard, he was admitted to be under 13 hands—a genuine pony—and then won the race in easy style. This little horse, some short time after, the writer matched to gallop 19 miles in an hour, carrying 9 stone 7 lbs; and he won, with nearly three minutes to spare. He could canter free and true carrying a rider of 16 stones or 224 lbs.

Some facts of the various British breeds of ponies may not be out of place.

1st. The Galloway, though not a pony proper, is akin to that race, and, as already observed, takes his name from the district which had become celebrated for this kind of nag. The breed is now nearly locally extinct. It was famous for speed and stoutness; was very sure-footed, and on that account of much value for traveling over rugged and hilly districts. As previously mentioned, its beauty and spirit was undoubtedly derived from the Spanish or Moorish jennetts. The native Galloway breed, however, on which the latter stock had been grafted, must have been good, inasmuch as we learn that Edward I. of England sought after and imported great numbers from Scotland. The height was usually about 14 hands, and the color bright bay and dappled brown; the head was small, and well set on; and the leg-bones, under the knees and hocks, were flat, and in character clean and sinewey, as is so remarkedly the case in the Arab. Some extraordinary feats of speed and endurance of fatigue could be related of this race; but limit of space and time interpose.

2d. The Highland Pony is generally a cross-made animal; head large; short fore-legs and long hind ones. It travels upon ascents so well as, in the Scotch Highlands, to be very serviceable, and is very cautious in traversing boggy or unsafe places.

3d. The Shelty abounds on the Shetland Islands, and is found on all the islands of the north and west of Scotland, and also in the mountainous tracts of the mainland, where close to the coast. It ranges from $7\frac{1}{2}$ to 11 hands in height, is beautifully formed, and possesses amazing strength for its size; head small; the mane long and flowing, and the full tail brushing the ground; the back is short, the quarters lengthy and powerful; the legs flat, firm and clean, with small and well-formed feet. It is a high-spirited, courageous, and tractable little animal; in fact, a magnificent miniature horse. On one occasion, a Shelty between 10 and 11 hands high, was matched to go from Norwich to Yarmouth and back, 44 miles, in four hours, and he accomplished it in three hours and forty-five minutes, with ease.

4th. The Welsh Ponies, it is supposed, were introduced into Wales through the early commerce which existed with their Celtic brethren of the north of Scotland. The race has been improved in size, by the introduction towards the end of the last century of a well-bred blood horse, Old Merlin. Hence, the term "a Mountain Merlin" is not unfrequently applied to these ponies.

5th. The New Forest Ponies are bred wild in that ancient Royal Forest and its vicinity. They, also, are assumed to have had their origin from horses of the Spanish Armada, another portion of which was wrecked on the New-Hampshire coast of England. Marsk, a small but famous race-horse, was so little valued for the stud, that he was suffered to run wild in

the New Forest, where he improved this breed. But his destiny was wonderfully changed when that extraordinary race-horse Eclipse made his appearance, against whom no horse in England had a chance, whether in long or short races. He was a chance get of Marsk, and the discovery of his great racing powers at once withdrew his sire from his wandering forest life, and elevated him to the very highest role of the Stud. His fee for many years was $500 each mare, and he got many of the finest race-horses on the English turf of that day.

6th. The Exmoor Ponies are raised in and around an old forest of that name. They are mean in appearance, but hardy and useful in their way.

7th. The Dartmoor Ponies are similarly raised, in the precincts of an old chase. They are not usually handsome, but on one occasion a very handsome pony was seen among a wild herd, and a gentleman determined to have it caught. With the aid of several men on horseback, he got it separated from the herd, and drove it up one of the rocky hills, there called a Tor, and into a corner; but the pony seeing no other way of escape, made a desperate leap over, and fairly cleared one of the men on horseback; and clattering at speed down the hill, rejoined the herd. In the beautiful and picturesque district of England here spoken of, many of the farmers are even to this day without a single cart, car, or wagon; and the whole produce of the farm; all manure, everything, is carried in panniers, on the ponies' backs.

The above gives some notion of the races of ponies in Britain; but is a very meagre sketch.

Of the Canadian Pony, it may, perhaps, not be irrelevant to observe that it partakes somewhat of the nature of the Galloway. It was originally introduced from Normandy. The Norman horses are small, active, and hardy; and so is the Canadian, and both often display good trotting action. It is an interesting fact to remark how this small and good type of the horse family likewise claims oriental descent. In the time of the crusades, Normandy supplied more than her quota of chivalry to that misdirected, but grand and singular exhibition of human enthusiasm and enterprise; and those of her leaders and knights who regained their own land once more, having discerned in Palestine the rare powers and great value of the elegant, gallant little Arab horses of the desert, so full of energy and action, brought home fine specimens, from which have descended the present compact and hardy Norman type. At the same period and from the same source the English horses appear to have been improved. The modern blood or thorough-bred horse of England, however, is a descendant of Arab and Barb blood, introduced during 130 or 140 years preceding the present century, and the lineal purity of which is maintained with unfailing solicitude. The oriental qualities are the same, but much greater size and higher speed have been attained by care, keep and judicious crossing. During the present century few Arabs have been imported, and it is not supposed they can now improve the thorough-bred horse. No breeder would resort with a turf mare to an Arab for a cross. Still it is interesting to see how this race has been the basis of all improvements. The Arab himself, or his descendant, the purely-lineaged thorough-bred blood horse, are the only sources of true improvement for the general breeds of any country. Farmers, breeders, and all interested in raising the latter most generally useful class of horses, should well ponder upon and inquire into this subject. Wherever the true Blood horse has alone been relied on for improving the mixed or general class, there this breed has progressively improved. But whereve half-bred stud horses have been trusted to, a degenerated race has followed.

John C. Ralston.

New-York, 20th Nov., 1855.

UNITED STATES AGRICULTURAL FAIR.

We have already given a description of the grounds prepared for this great show. It was the opinion of all with whom we conversed that the arrangements were greatly superior to those of any other similar exhibition. Everything was just what we should desire it to be. Mr. Wilder is worthy in this respect the very highest commendation that can be paid him.

The first day of the show was opened at 10 o'clock, in due form, by a proclamation from Gen. Tyler, the chief marshal, and Mr. Wilder, the President of the Society, and

A GRAND CAVALCADE

Of 300 horses, three abreast. As soon as the necessary preparations were made, the band gave the usual salutes, and as they began to move round the track, the "National Air" was played with great effect.

EXHIBITION OF STALLIONS—(ROADSTERS.)

At eleven o'clock the bugle sounded the call for the Stallions (roadsters) to appear on the track and show their good qualities and their speed. The following horses answered to the call and were driven round the track twice, the first time slowly, and the second at the top of their speed. North Horse, owned by Mr. North; Morgan Empire, Jas. H. Chamberlain; Boston Bay, Adams Carpenter; Ethan Allen, O. S. Rowe; Black Hawk, J. E. Wayne; Stockbridge Morgan, John Burrard; Brown Horse, Charles Boylston; Black Hawk Chief, Edgar Hill; Morgan Hunter.

On the second time round some fine trotting was exhibited. The quickest time made was 1.24 (distance one-half mile); this was made by Black Hawk Chief. Others made the half-mile in 1.25, 1.34 and 1.36. Tristram Burgess, of Rhode Island, was chairman of this committee.

THE EXHIBITION OF BREEDING MARES

Followed. There were about thirty. Many of them had their colts with them, and the gambols of the little fellows as they moved round the track gave much amusement to the crowd of visitors.

DINNER.

At one o'clock the officers of the Society and invited guests, 200 or 300 in number, formed a procession at the president's tent, and marched to the building erected for the use of committees, etc., and sat down to an excellent dinner.

EXHIBITION OF PONIES.

After dinner the first exhibition was that of ponies, of which class some 12 or 15 were entered. One little poney, 9 years old and about 8 hands high, was an over match for many larger animals in trotting, and besides this he had no special respect for his rider, whom he threw repeatedly. There seems, very strangely, a very extensive ignorance as to what constitutes a pony. The word is of English origin, and therefore the English definition ought to be conclusive. If some other distinguishing line is to be drawn, another name should be coined, as the case may require. The rule, as given in England, is that animals less than 13 hands in height are ponies. This will include not a few usually termed horses in this country.

A TRIAL OF SPEED

Between horses that had never been trotted for money was attempted. Twenty horses were entered, and were started four abreast. Confusion was of course the result, and the number was then reduced to five, by a selection of the fastest from each five, that number being called on at a time. In all the trotting of this character, that we noticed, the results were quite unsatisfactory, from the fact that the horses were untrained, and their riders unskilled, and the necessary consequence of the desire of each rider to push his animal to his highest speed was, he was driven beyond it, and the animal broke. This either gained or lost time according to the management of the driver. As these horses were not entered as racers or trotters, gaining this prize literally proved nothing as to the value of the animal. Had the list been entered for grace of carriage or of form, or any other definite thing, for which excellence *was claimed*, the trial might have been of consequence. As it was, it only amused the throng of spectators, and probably that, in fact, was the intention of those who determined this part of the programme. As a precedent, however, this may not, under all circumstances, be wisely imitated. It is wrong in principle. As well might you test milch cows by a trial in plowing, or test swine by the fineness of bristle. One should enter the lists only under circumstances in which he is competent to earn a good reputation.

SECOND DAY.

A very severe storm confined almost everybody within doors. We scarcely remember a severer easterly storm than prevailed through the whole day, with few and short intervals. In going through the grounds we were thoroughly drenched, and were glad to cut short our examinations and to seek a quiet fireside. Scarcely five hundred people were on the ground during the whole day. The progress of the show was completely interrupted, save a partial examination of animals in their stalls. One of the Boston dailies came out the next day with the following *jeu d'esprit*, which is too good to be lost. He says:

"When after the rain of Wednesday and the night following it, the clouds had rolled away, with the eclipse, so that the interrupted festivities on Harrison Avenue could be renewed, all Boston seems to have been reminded of the lines Virgil wrote upon a similar occasion:

"'Nocte pluit tota, redeunt spectacula mane.
Divisum imperium cum Jove Cæsar habet.'

"From the heap of translations of this, sent to us within the last few days, we select a few of the most literal, which follow:

"'It rains all night—the fair revives at morn,
The skies and Wilder *take the reins* by turn.'

"'It rains by night; by day we revel;
Colonel Wilder beats the devil.'

"'At night 'twas foul; at dawn 'twas *fair;*
Who wonders? Colonel Wilder's there.'"

THIRD DAY.

Thursday opened with a bright sky, but a cold air. The multitudes who had come to see the show were not to be frightened by this, but the hardier sex buttoning their coats tightly, and the ladies wearing a thicker shawl closely folded about them, poured into the enclosure, and the sale of tickets for that day shows the attendance of 100,000 persons. 60,000 tickets were sold before 12 o'clock.

CAVALCADE OF TRUCKMEN.

One of the finest shows, to be seen anywhere and at any time, is the corps of Boston truckmen. A friend by our side counted 625 horses. They entered the grounds at about 10 o'clock, led by Col. Peter Dunbar, as their chief marshal, accompanied by a band in a large wagon drawn by six splendid black horses. White and light gray horses, 200 in number, formed the first division; next came the dark grays, reds, bays, and blacks.

EXHIBITION OF WORKING OXEN.

At half-past ten about twenty yokes of these animals were driven over the track, though many belonging to this class were not removed from their stalls.

EXHIBITION OF STALLIONS.

This was a fine display, and succeeded the show of oxen. This was followed by

VOLUNTEER TRIALS OF SPEED.

But no horse of eminent speed appeared in this contest.

After dinner the spectators were highly gratified by an exhibition of some of the finest horses upon the grounds. The famous blood horses Trustee, Logan, Fashion, Matchless and Tricolor tried their paces round the track.

This was followed by an exhibition of breeding mares, twelve of which appeared on the course.

The third trial was one of speed, open to all horses that had never trotted for money.

FOURTH DAY.

The morning of this day was occupied by an exhibition of horses on the track in modes and styles according with the fancy of their owners and riders. At 10 o'clock

A GRAND CAVALCADE

came off, led by the marshals, and consisting of horses led by their grooms, breeding-mares and their colts, horses of all work, in carriages; these were followed by matched horses, 48 in number, in carriages filled with gentlemen and ladies, and by the trotting horses. The whole number is reported at 127. The cavalcade filled the entire circle.

THE DRAWING MATCH.

At 11 o'clock this trial came off. The load was 6,100 lbs. It was drawn a given distance, and then it was *backed* to its original position.

A TRIAL OF DRAFT HORSES

was also made at 11 o'clock, in which several splendid horses exhibited not only immense power but wonderful docility and a finished education. The slightest intimation of the teamster was sufficient to secure just such action as was desired. The teams of Col. Cowdin and of the E. B. Sugar Refinery Co. were among the most remarkable.

A TRIAL OF SPEED

by fancy matched horses took place at 11½ o'clock. There were five matches, and the spectators were very much gratified by the show.

THE BANQUET.

The procession of guests at the banquet was formed at a quarter before two, and proceeded from the President's tent to the mammoth tent in which the banquet was provided. Here all the arrangements gave evidence of good taste and practical skill. The tent was decorated with the flags of

various nations. The dinner, provided by Mr. Wright, was well prepared and abundant. Between 2000 and 3000 ladies and gentlemen partook of it.

By invitation of the President, Mr. Wilder, a blessing was invoked by Rev. Dr. Lothrop, of Boston. After the completion of the feast, Rev. Dr. Kirk returned thanks.

The richer feast came next. The President arose and made an admirable introductory speech, substantially as follows:

"*Brother Farmers and Fellow Citizens*:—Your presence on this occasion affords me unfeigned pleasure, for it gathers around me the friends and patrons of agriculture. Most sincerely do I rejoice with you in the lively interest which is manifected by all classes in our exhibition, especially in the presence of our honored guests, whose attendance gives importance to our meeting, and whose voices are ever grateful to the ears of their fellow-citizens. [Cheers.]

"It is also particularly gratifying to meet at this festive board so large a representation of the mothers and daughters of our land, who have come up here to cheer us by their approving smiles and to honor the primeval pursuits of man. Ladies we greet you with a most cordial welcome. [Loud applause.] Nothing can be more appropriate than your presence. Nor is it a new thing in this pilgrim city for *woman* to be engaged in industrial exhibitions. More then a century ago, three hundred of your patriotic mothers assembled on Boston Common, each with her spinning-wheel and distaff, to advance a branch of domestic industry which has long since been supplanted by the progress of invention.

"One of the most interesting incidents of this exhibition relates to the spot on which it is held. This whole territory is land redeemed from Neptune's dominions. Here modern enterprise has literally fulfilled the words of Scripture, and has said to the surrounding hills, "be ye plucked up and cast into the sea," and they have moved in obedience to its command. Here, where but yesterday rolled the ocean's wave; here, in the middle of the nineteenth century and in the midst of this populous and flourishing city—the National Agricultural Society has come up with its flocks and herds, pitched its tents, and invited you to unite in celebrating the triumphs of art over nature, and to witness the achievements of science in a most important department of husbandry.

"In behalf of those whom I have the honor to represent, and in my own behalf, I tender the grateful acknowledgments of this Association to the municipal authorities of Boston for their prompt and hearty coöperation in the preparation, for this exhibition. [Applause.]

"Our thanks are also due to the patriotic citizens of this metropolis and its vicinity for their private munificence in the creation of a guarantee fund to insure the success of this enterprise. Nor would we be unmindful of our obligations to the Massachusetts Society, a pioneer among the agricultural associations of our country, and to other benefactors for the aid afforded us by their liberal donations and timely exertions. We are also under great obligations to the contributors who have placed their valuable stock on exhibition at no small risk and expense—to the marshals, judges and others who have aided in carrying forward the enterprise to its present happy consummation. [Cheers.]

"Fellow associates—I congratulate you upon the complete success which has crowned another exhibition of this Society. The present has surpassed those that preceded it in interest and utility, and awakens the most pleasing

anticipations of those which are to succeed. The record of these proceedings will constitute an important chapter in the history of American agriculture. A very large number of entries have been made. But our principal object has been *quality*, not quantity; and it is believed that for points of excellence, this exhibition holds the pre-eminence among those of our own and other lands.

"All other productions of agriculture and the arts have been excluded from this exhibition in order to concentrate the attention of the public upon a department deemed of paramount importance to the farmer, and to afford our fellow-citizens the most favorable opportunity to examine the best domestic animals which have been obtained by gentlemen devoting to this specific object their time, talents and fortunes.

"Another prominent object has been to awaken in the public mind a just appreciation of their labors, and a stronger love for agriculture and rural life. How delightful the occasion! How salutary its influence! Here the rough animosities of party strife, the asperities of political discussions and the bitterness of sectional jealousy are merged and lost in the love of a common pursuit and a common country, and in proportion as we act in concert and harmony for the advancement of the great industrial arts in life, we cement and strengthen the bonds of our glorious Union. [Enthusiastic cheering.] Here we witness an illustration of the power of voluntary associations, the grand characteristic of our age, the great engine which propels the car of modern enterprise.

"The time is within the recollection of some who now hear me when the first agricultural society in this country was established. This honor belongs to Philadelphia, whose society for the promotion of agriculture is honorably represented at this board by a large delegation. A subsequent year witnessed the organization of the Massachusetts society for the promotion of agriculture, also here represented by worthy and illustrious members. Others soon followed, and now they are numbered by hundreds, extending from Maine to California, from the British provinces to the gulf of Mexico, whose delegations we are happy to meet on this occasion, and whose annual exhibitions have become the great gala days of the people.

"Ladies and gentlemen: on this third anniversary of the United States Agricultural Society, it affords me peculiar pleasure to welcome you to this commercial metropolis, and to the pleasures of this festive and intellectual entertainment.

"We, of New-England, cannot boast of a luxuriant soil like that of the prairies and valleys of the West, nor of a genial clime like that of the sunny South; but industry constrains our reluctant soil to yield its increase; and though prominent among our exports are granite and ice, yet these are no indications of the hardness of our hearts, nor of the coolness of our affections."

It would be a delightful service to present the entire speeches of Messrs. Governor Gardner, Governor Hoppin, of R. I., Mayor Smith, McIntire, of Philadelphia,—a beautiful address, abounding in classical allusions,—John C. Gray, Winthrop, Everett, Thompson, of Canada, John A. King, of N. Y.; but they would exclude all other matter. They were appropriate, chaste, and eloquent, and afforded a treat not often enjoyed.

FIFTH DAY.

Trotting matches formed the chief attraction on Saturday, and ere, nightfall the vast concourse of people retired from these busy scenes

delighted and profited. Perfect order prevailed from first to last. Not a single act of impropriety, to our knowledge, occurred from the beginning to the end. For this Mr. Wilder and Gen. Tyler with his aids deserve great praise.

SHOW OF CATTLE.

Animals entered for exhibition were arranged according to blood; as, Natives, Grade animals, Jerseys, Ayrshires, Devons, Herefords and Durhams. Fat cattle and working-oxen had each their own row of stalls. Swine were distinguished also; as, Berkshires, Essex, Suffolk and Mixed. Sheep were grouped according to breeds; as, South-downs, Spanish Merinos, Silesian Merinos, Leicesters, etc.

It is not our intention, even had we the ability, to pronounce upon the comparative merits of all the animals presented for premiums. This is the business of the several committees. Neither do we purpose to give their reports on these points. We do not advertise in this form. Where there are reasons for presenting certain animals or things to the attention of the public other than the benefit of their owners, we give freely all the space required for such notices. We wish to apprize our readers of all new and improved processes, all facilities for securing advantages in agriculture and the industrial arts, newly discovered or generally unknown. Hence we publish particular accounts of many new inventions, newly imported animals, etc., etc. Besides, those who expend much time or money for the purpose of adding to the pleasure or profit to be derived from fairs, deserve especial and personal commendation.

Hence we make special mention of the following choice animals, exhibited on this occasion:

Mr. B. V. French, of Braintree, Mass., had a large number, of excellent cattle of various kinds, and, like everything he has on his farm of excellent quality. Among these were working-oxen, cows, calves, bulls, etc.

Mr. L. G. Morris, of Westchester, N. Y., had a large number of excellent animals on exhibition. A cow—Edith—with a calf, was a very fine animal. A dozen pens were occupied by the imported cattle of this distinguished farmer. His South-downs were also of excellent quality, both ewes and bucks, and he also exhibited several excellent swine of the Essex and Berkshire breeds.

Mr. Buckminster, of Framingham, Mass., editor of *The Ploughman*, had a great number of Devon cattle, many of them very fine animals.

Mr. Thos. Motley, of W. Roxbury, exhibited a large number of his famous Jersey cattle. This herd is well known to all stock raisers as one of the finest in the country.

Mr. C. S. Wainwright, of Rhinebeck, N.Y., exhibited a herd of eight Devons, some of remarkable excellence.

Messrs. J. & J. Stickney, of Boston, exhibited several fine specimens of Suffolks, from their well known and extensive herd of swine.

Mr. W. Chamberlain, of Ducthess Co., N.Y., occupied seventeen pens with his Silesian Merinos. They were beautiful specimens of fine fleeces.

A large number of entries were of single animals, and most were of less than half a dozen. To specify even those of special excellence would be a great labor. Those above named are worthy of commendation for the *amount* as well as for the quality of their contributions to this great show, and several of them deserve especial praise for bringing these animals a great distance. Such transportation, even with the aid of our railroads, involves a considerable expenditure of time, risk and cost.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

LAMOILLE COUNTY FAIR, VT.

THE Lamoille County Fair was held at Hyde Park, September 26th, 1855. The Ninth Annual Fair of this county was well attended, and went off to the satisfaction of all. The animals exhibited were numerous and of a superb quality. Oxen bear so high a price, all that can be purchased are bought and drove off; only sixteen yoke were present. Three-year-old steers, two-year-olds, yearlings, and calves in the yoke, were numerous and fine, some calves as large as most yearlings. Forty-three premiums were awarded on neat cattle. Splendid specimens of bulls from six years old to calves. A large collection of first-rate horses, mares with colts by their sides, brood mares, geldings, three, two, and one year old. Five stallions, four spans matched horses. Twenty-seven premiums were awarded on horses. Of sheep, swine, and poultry, good specimens were present. The exhibition of dairy, honey, and sugar, was creditable; of fruit, good; garden vegetables of mammoth size.

Manufactured articles and needle-work were exhibited in great variety, and many specimens were creditable to our mechanics, male and female.

HYDE PARK, 27th Oct., 1855. ARIEL HUNTON.

ANNUAL EXHIBITION OF THE AMERICAN INSTITUTE.

WE have had but little opportunity to re-view the large collection of machines and other mechanical contrivances collected in the Crystal Palace, but we here describe a few of the articles which seem to us quite worthy of notice.

THE EXPERIMENTAL STEAM CARRIAGE.

AND several designs for steam carriages for various uses, by J. K. Fisher, attract much attention; and should be carefully examined by all who are willing to aid, in the only practicable way, to relieve the streets of this city from the crowd of carriages and from filthiness. The government will not, in our time, keep the streets clean; and no government can keep up to a civilized standard of cleanliness while horse power is used, unless the streets are swept every day.

It has been ascertained, by analysis, in London, that full one-third of the street dirt is dropped by the horses; and nearly all the rest is worn from the pavement—a trifle being allowed for the iron worn from the shoes and tires, and for that portion of the shop-sweepings that does not originally come from the street. And it has been found that for one pound of iron worn from the tires of a cab of 10 cwt. seven pounds are worn from the horse's shoes. Hence it appears that only a twelfth of the dirt is made by the wheels, of a vehicle as heavy, in proportion to the motive power, as an omnibus.

It has been found that a steam carriage can draw behind it, at six miles an hour, five times its own weight; and that when the machinery is in the carriage that carries the passengers, the total weight is less than when there are two or more vehicles. From all the foregoing, it appears that the dirt made by steam carriages on stone pavements will be less than a tenth of what

is made by horse carriages of the same power. It scarcely need be added that the dirt worn from the pavement and tires is of a less offensive quality and less liable to be blown about than that made by horses.

We have in former numbers shown, by extracts from Scotch journals, that cast-iron paving costs 6 per cent. less than stone paving in Glasgow, and 40 per cent. less in London, and that its durability is much greater. But, it is said, horses slip upon it. If steam carriages come into use, this paving will follow, and *no dirt* will be made. The streets may then be always cleaner than it is practicable to keep houses while the dirt from horse-power is blown and tracked into them.

The power required to draw a ton on the best stone pavement is 31½ lbs., on iron it is 7½.; and the wear of vehicle and pavement is in proportion to the power expended when the material is the same. But iron neither suffers much wear, nor grinds much from the tires that run upon it. We may therefore conclude that the wear of wheels and pavements, and the expenditure of motive power, would be less than a fourth of what they now are if steam should supersede horses; and that there would be no expense for cleaning, for the rain would keep the streets always cleaner than they ever are now made and can be made while the pavements are rough.

All this is nobody's business—that is, nobody will assume the trouble and expense of providing a remedy for this state of things, because individuals will not get paid, and the government no more thinks of doing it than it thinks of reflecting downward, for the use of the city, the gas-light that now goes off to the fixed stars. The questions with speculators is: "Can we secure a monopoly, so that others may not build and run steam carriages, and perhaps run us down as soon as we have shown that they are economical?" The question of taxpayers should be: "Will a few thousand dollars hazarded in a liberal experiment save us the greater part of $1,300,000 per year, for paving and cleaning streets—in a shabby way?" Finally, the question of every man and woman should be: "How much per year, in washing and scrubbing out clothes, may be saved, without lowering the standard of manliness, if the present motive power be superseded by a power that will make no dirt?"

In answer to the speculators' question, we say: Yes, we have examined the subject, and are satisfied that Mr. Fisher has made such improvements as will secure a virtual monopoly, and a very profitable one. To the taxpayer's question we answer: You will save $800,000 per year, and make your property so attractive that people will live in town who now seek health and comfort in the country, and thus your property will become more valuable. And to every body's question me say: The cost and wear and tear by washing, brushing, etc., is probably two millions a year more than would be required for equal cleanliness if steam carriages were in general use.

Moreover, the best engineers in England have testified that steam carriages are safer, and in all respects more agreeable than horse carriages.

The design of a private carriage, suitable for physicians or others who have to ride much, ought to be put into execution. Mr. Fisher proposes a subscription of $1500 to build it—the fund to be disposed of at a private meeting held for the purpose; so that it may be built to suit the tastes and wants of the person who is to have it. The cost of running it will be trifling compared with that of horse-keeping; the comfort of it will be great in cold weather, as it can be warmed by steam, as the ferry-boat cabins are; and the speed, when on a country road, will exceed that of the best horses. As a guarantee that it shall perform well, Mr. Fisher is willing to pledge a

collection of copies from the best paintings in Italy, which are worth more than double the sum required. We think the project *safe;* but we hope that liberal men will subscribe, even though they may deem it a liberal hazard.

Pipe and Tube Making Machinery.—Webster's Patent is a new invention now exhibited for the first time. The rolling is done on the inside of a large open cylinder, within and to which a couple of small rollers are geared, between which a mandrel is placed to give form to the tube. The inventor states that 10,000 feet of tin tubing may be formed in one day by a single man. 250 feet is an ordinary day's work. This improvement is applicable to the making of locomotive tubes, stove-pipes, etc. It does the work well, and is very simple in construction. Webster & Miller, exhibitors, 67 Nassau street, New-York.

Hand Corn Planter.—This implement is the invention of Fenwick & Bucklen, of this city, and is small, and would easily escape notice, but presents an exceedingly simple arrangement for forming the hole in the soil, dropping the desired number of grains of corn into the same, and then covering them up. In operating, an up-and-down movement of the tube is necessary. The end of the tube is thrust down into the soil and makes the hole, it also takes up dirt enough to cover the corn; by the act of raising the planter out of the soil, the corn is discharged and covered. This machine, in its construction and operation, is said by the inventors to be better than those in use from the fact of its employing a swinging or turning seed distributing plate instead of a horizontal sliding one. The covering device is very simple, and the whole contrivance is much cheaper of construction than any other in use, as it costs but a dollar and a half. Coleman & Williamson, 6 Wall street, N. Y., agents. It was patented in 1855.

The Rotary Lock is guaranteed by the makers as a security "against the most skilful lock picks," which is true no doubt to a certain extent, though no lock that we know of approaches the famous Day & Newell's Lock, but this is very expensive. The rotary lock is comparatively simple, having six tumblers, with a peculiar key—flat, with six prongs; carried conveniently in the pocket, and the bolt, being double, clasps the staple, or rather its equivalent, and releases its hold on the slighest pressure on the knob from the inner side, or by the key on the outside. We should like to give a view of this, and may do so hereafter.

Automaton Gate.—We are much inclined to adopt the claim of the patentees, who say it is "the only practical self-operating gate ever invented. It works admirably in the Crystal Palace, but we have not been initiated into its inner mysteries to judge of its durability or its liability to get out of order. "It is readily attached to any gate." As you approach it in a carriage, you extend your hand to a small lever by the side of your path, and the gate instantly opens. Leaving it, you touch a second lever, and it closes and fastens itself.

Self-ventilating Refrigerator.—This is designed to secure a constant ventilation, without raising the temperature of the air enclosed. The current passes in at one end, flows by a mass of ice, becomes cold, flows under a partition into the main part of the refrigerator, and escapes as it entered on the opposite end. It is highly commended.

INDUSTRIAL EXHIBITION AT BOSTON, MASS.

This capital show, now open in Bowdoin Square, had its origin in the energy and activity of a few working mechanics, by whom it has been carried out until it has become one of the best exhibitions of the kind we have ever seen.

The grand feature of it is its variety of new and useful mechanical inventions. The show of fancy articles is very limited, and might well have been omitted altogether. So also the departments which usually come under the supervision and management of females, are too small to attract much notice. Were all these absent it would give a unity to the exhibition which would to us, under the circumstances, be peculiarly pleasing.

We were unable to spend more than two or three hours, while we should have been glad to devote as many days, to the examination of its attractions. A very concise notice of what came under our observation is all that we are able to give, but we would be glad to publish descriptions of other machines if furnished by those who are familiar with them. The first object that particularly attracted our attention was

A Patent Hand Drill, by G. S. Harris, designed for boring iron or wood. Its use is similar to the small drill used by watchmakers, etc., with a bow; but in its original form the drill is moved alternately in opposite directions. In this, by the simplest contrivance, it is made to revolve continuously in one direction. This is a great improvement.

Burglar's Alarm.—Near the preceding stands a capital contrivance called "Brown's Patent Burglar's Light Alarm Apparatus"—a name by far too long and cumbersome for so capital a notion. When this machine is properly attached to a door, the door cannot be opened without ringing a bell and lighting a lamp. It may well be applied also to other uses than the exposure of burglars. The alarm is so sudden and so thorough, that it may very usefully be put in requisition for calling any lazy sleepers, for waking physicians, etc. It is not only useful, but cheap, and easily attached.

Hand Stamps.—Two inventions, having the same application, stand upon this first table, both excellent designs for stamping letters, cards, etc. One is well contrived, with inkstand, etc., and costs some six or eight dollars; the other is more simple, and costs only about half as much. One of these is by the American Stamp Co., and the other is called Harris's Hand Stamp.

American Rock Drill.—This ingenious machine consists of a drill spindle, which is supported by a frame, and is raised by the action of two grooved wheels or cams, and is allowed to drop when at the proper elevation. The drill is turned by the action of two other wheels. This is worthy of a more extended notice. It is run by horse-power, and is said to be capable of drilling holes six inches in diameter, and at the rate of two feet per hour.

Patent Loom for weaving Bags.—Mr. A. Brigham, of Manchester, N. H., has here a capital contrivance for weaving seamless bags, of any size. It is accomplished by a slight alteration of a common loom, "by attaching a lip on one cam with one of the treadles to slide, for the formation of the bottom of the bag." Mr. B. has here provided the public with a cheap, simple, and durable contrivance for the manufacture of articles universally

required and needed constantly. Pillow-cases may be woven entire by the same loom.

Warner's Curvilinear Sawing Machine.—We should like to exhibit this beautiful machine to our mechanical readers. It will saw almost any conceivable form, on two sides. Two saws are hung upon swivels, which are guided by a pattern, with a self-feeding movement. It will cut O. G. pillars, Gothic and Roman window heads, chair stuff, piano legs, twisted stair rails, circular, ecliptic, etc., felloes, plow beams, etc. A large machine would dress ship timber to any pattern.

Outside Window Blinds are managed with the same ease as a common inside shade, by a contrivance of Mr. Sanger, of Watertown. The cost, if we recollect, is only some $15 to a window.

Planing Four Surfaces.—This feat is accomplished in a very workmanlike manner by a very simple invention of Mr. Killam, E. Wilton, N. H. The planes are rotary. Two sides of the timber are planed simultaneously, and as the timber advances it meets two other cutters which complete the process. It is applied to any desired size, from an inch square or less.

Whipple's Self-acting Nipper Blocks.—This unmeaning name is attached to a capital contrivance. The proprietor commends it as a labor-saving machine. Its greater recommendation seemed to us to be its security from danger. A ratchet wheel is affixed to the wheel of a common pulley, by means of which the weight is held in its place, without requiring a constant draft upon the strength of one who is operating it. A bale of goods will hang suspended anywhere between the lower floor and the upper loft, without danger from the slipping of the rope, or the carelessness or want of strength of those employed in its management.

Hotchkiss's Patent Self-adjusting Screw Wrench seems to us one of the best of the many forms which have been given to this very important tool.

Smith's Patent Machine for Mortising Blind Stiles is a very simple and yet effective machine. It can be managed by a boy, and will make thirty or forty mortises per minute; can be set for any depth, and at any angle of inclination. It is a capital contrivance.

That in which the whole community has the most direct interest is

The Atmospheric Telegraph.—This invention, by which it is proposed, as our readers know, to convey packages, mails, etc., from city to city, with a rapidity exceeded only by that of electricity, is seen in this exhibition in Bowdoin Square. Mr. Richardson, a son of the projector, is in attendance, with another assistant, and furnishes all possible opportunities for observing the principle and the action of the machinery. We, long ago, came to the conclusion that this plan is perfectly feasible. We were convinced that by the action of an air pump, as a condenser and a rarifier, the most rapid movement of a hollow piston in a properly formed tube, may be secured for almost any desirable distance. Such a result has in fact been obtained through a tube a mile in length, the piston passing through the entire distance almost in a second of time.

The subscription books are now open for the organization of a company for the purpose of erecting a telegraph of this kind between Boston and New-York. Its friends are sanguine that their object will be secured very speedily in the completion of the telegraph as far as Worcester, 45 miles, and the success of this section will be an entire guarantee of its success for any distance. We earnestly commend this subject to the friends of progress, and

even to those who would make a profitable investment of their funds. We cannot doubt its ultimate success; and, if successful, it will be in our judgment the most lucrative stock in the country. Nor is this the limit of its possibilities. That hollow cylinder which can carry a large mail-bag, why may it not also carry a living man? Air enough would be contained in his confined quarters to support life for some minutes, and this would be all that would be required in a progress of fifty miles. This of course could not become a common mode of travel, but might be resorted to in emergencies.

Harris's Patent Portable Circular Saw-Mill seems a valuable invention. It may be adapted for mitering, bevelling, tenanting, etc., and, it is claimed, requires only half the power necessary in other arrangements. It may be adapted to steam, horse or hand power.

Improved Stump Extractor.—This looks like an old friend with new and modern dress. It is, at any rate, very efficient.

Spring Beds.—Of these there are more new varieties than we have seen elsewhere for some time. One is a bed of spiral springs, suspended within the bedstead, over which a covering is laid upon which the mattress rests. It has a hinge for raising the head. Another is formed by coiled springs at each side of the bedstead, supporting slats, which support the mattress. A third and very cheap form consisted of two cords drawn tightly from the head to the foot, on which slats were laid. Besides these,

Plympton's Secretary Bedstead is exhibited, which we have mentioned in our account of the show of the American Institute.

Hay and Straw Cutters are represented in considerable variety. Among them are Gales's Eagle Cutters, for hay, straw and corn; the Patent Excelsior, for the same; and the celebrated self-sharpening hay-cutters, etc.

A Shoe-pegging Machine works well and rapidly. The shoe is placed upon a movable feeder, and brought into position under the awl and hammer, which are set in motion by steam or foot power. The awl first perforates, then a knife is made to split off a peg, from a strip of peg timber, which is fed up by a counterpoise, and put in position for the hammer, which is instantly made to come down with an elastic sort of blow like that dealt by a living shoemaker. It is neither pushed in nor driven like a pile. The machine drives two rows at once alternating from one to the other, or a single row, as desired, and will travel entirely around a good sized shoe in two minutes.

Woodworth's Cordage Machine, or rather machines, almost literally contract that longest of factories, the ropewalk, into a nutshell. First is a spinning machine, with compound fliers, which gives the hemp three distinct twists as it passes on to a twine spool. The spools of spun yarn are then placed on three sets of triple reels, which are made to revolve each on its axis and all around a common center. Each center gives a twist. In this manner twist is gained to compensate for what is lost in the lay of the strands.

Oscillating Engines.—A small oscillating engine of Messrs. Trousley & Reed is peculiar. It is mounted on the top of a common tubulated locomotive boiler. Its peculiarity appears to be that the steam is not admitted to ports in the trunnion, but from a steam-box which encloses the trunnion into ports in the contiguous portions of the cylinder. The advantage gained by this arrangement, in applying the oscillating principle to small engines, will be quite obvious to practical men.

Another oscillating engine, of which a working model is on exhibition, is that of Mr. Juan Pattison, of New-York. The steam-box is not connected with the trunnion at all, but is arranged above the cylinder, like a saddle.

The exhibition occupies three stories of the building, and all the heavy machinery is propelled by steam power. The ground floor is almost entirely taken up with heavy machinery. In this department will be found a chronometer engine, manufactured by J. A. Reed, of N. Y.; burr mill stones, from B. F. White; a variety of weaving apparatus, from Davis & Thurber, of North Andover; stoves, from J. M. Reed; soap stone hearths, fire places, etc., from Wm. H. Warner; plain and carved tables, chairs, etc., from the Massachusetts Moulding, Wood Cutting and Turning Company; safes, from Marland & Co.; carriages, from A. J. Gibson & Co., of Clinton, and C. A. Hamilton, of Boston; harness, from William Kelms, of Boston; a magnificent carved sideboard from Jas. G. Blake, Cornhill; iron railings, fences, etc., from Chase & Co.; and specimens of india-rubber manufactures from Geo. N. Davis & Brother.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

LETER-INDICATING TELEGRAPH.

DAVIS' PATENT.

THE inventor of the "Letter-Indicating" or "Railroad" Telegraph being desirous of placing before the general public a *sure* and *practical* mode of preventing accidents on railroads; and being convinced that all those accidents which have resulted from prior accidents, or from detentions to trains, might have been prevented by telegrapic communication—provided the *mode* and *instrument* by which the information of any derangement to a train or to the railroad, or of any disaster, was simple, practicable, sure, and *perceptible* to the intelligence and capacities of the operatives on railroads—"*without previous study*"—has, therefore, invented the "Letter-Indicating" or "Railroad" Telegraph *expressly* for the prevention of collisions and accidents; and for the transaction of the general business of railroads.

The construction of this electric telegraph is so permanent, and the novelty of its operation so simple, that it is not liable to derangement, and by fair usage, it is not possible to put it out of adjustment.

The mode of operating it also is such that any engineer, conductor, breakman, depot-master, ticket-agent, or master of repairs on the railroad track—"*without previous study*"—can correctly operate and accurately communicate by it.

This telegraphic instrument is not impelled by a weight, or a spring, or any local power—but by the power of the electro magnet. It will correctly operate in any locality or position; on or in a car, in the hands of the operator, or on the ground, as well as in an office. It never requires winding, being always in order when the batteries are charged. It may be carried in a train by engineer or conductor, or in hand-car by a master of repairs of the railroad track, and used at any point when an accident or a detention to a train occurs, or when and where it would be of service to the road-master. It gives the Roman letters, and is found by actual demonstration to be *practicable.*

The engraving above correctly represents the exterior of this telegraph. It will be seen that letters are in one circle on the dial, and figures in the other; also, that on the base at the right of the dial, there is a lever, or key, designed for the finger of the operator. The hand or index revolves over the dial always to the right. To set the index when out of place, move by hand till it points to the blank or starting point or dial; now if the key is raised, the index on each telegraph will point to A, and remain there till the key is depress, when each index will point to B, etc.

This telegraph has been put in operation on the Boston and Providence Railroad. An instrument may be seen in the superitendent's office in Boston, and the other in the railroad company's machine shop in Roxbury, where it is operated generally by the workmen.

It may be used in all places where the electric telegraph is practicable. It is particularly adapted to railroads, police, fire-alarm, and marine purposes, and to places where it is not desirable to employ operators. The following are full directions for working Davis' "Letter-Indicating" or "Railroad" Telegraph:

The signal call is made by rapidly striking the key till index points to letter P. The "*go ahead*" answer to this is made by striking key till index points to —·· when the message may be immediately commenced. In case the signal call is not answered on first attempt, then in a short time actuate index an entire revolution till you again rest on P, continuing so to do from time to time till call is answered.

When "go ahead" signal has been received, depress and raise the key steadily and rapidly till index points to first letter of message, on which dwell an instant, then actuate index to next letter of message, and so on till it is finished. The time to be taken in pausing on letter message letter, need be only sufficient to fairly show that *that* letter is a part of message at the end of each word pause on —·· about as long as for letter; and at the end of sentence pause on —·· about twice as long as for word.

Whenever any part of message cannot be understood, instantly raise your key, the other operator will be at once aware of it, and must immediately raise his key. During the ten seconds that both keys must be kept up, each operator will move his index by hand to F^{E}, after which press key down, and each index will point to —·. Then repeat the message.

To each telegraph is is attached an alarm-bell, which is adjusted when the instrument is not in operation, and which is sprung by operating the telegraph till index points to letter P, that is, making the "SIGNAL CALL."

All, therefore, that is required to apply said invention to railroad purposes, is to place at each station on a railroad, in care of the depot-master, one of these machines and an alarm bell; and connect them with a wire from station to station in the ordinary manner; and also by placing one machine in each train of cars—passenger or freight train—in care of engineer or con-

ductor; and one with each road-master, with a few feet of small copper wire.

In case an accident happens to any train on the road, (the disabled train being stopped,) the engineer or conductor in care of the machine will, by means of the copper wire, in a manner exceedingly simple and easily explained, put the machine in the circuit of the galvanic batteries which may be located in the respective depot stations.

By this invention an accurate and instantaneous communication from a disabled train, not only with the superintendent of the road in his office, but with every station-agent on the entire line, is attainable; and thus the danger of collisions and accidents on railroads, resulting from prior accidents, or from detentions of trains, or from derangement of any kind, is greatly lessened; and in case of an accident the detention to a train is greatly shortened, the derangement being immediately known, and assistance can be rendered in a short time.

Besides these advantages it affords a direct medium for the transaction of the general business of railroads, *and does not increase the expense*, as the depot-masters, ticket-agents, engineers, conductors, brakemen, and the operatives generally on railroads, are competent operators.

In the transaction of railroad business, where the routine of *questions* and *answers* is often repeated, words may not generally be spelled at length, but a code of phrases may be adopted, (*increased to any length*,) and thus by indicating a *single letter* or a *number*, a whole sentence may be transmitted. The code may be prominently engraved on the blank under the circle of letters on the dial plate, or written on a small card, and accompany the instrument. A few examples will suffice for illustration:

CODE OF SET PHRASES.

A signifies engine off the track at or near	—	—	—	—
B " tender off the track at or near	—	—	—	—
C " train off the track at or near	—	—	—	—

SIGNAL LETTERS TO INDICATE STATIONS.

C. N. Canton Station.
M. N. Mansfield "
E. J. East Junction Station.

Suppose it be required to communicate by the code from the point of disaster that an engine is off the track at or near some place noted in the code —say Canton station.

The engineer or conductor will take from the car the telegraphic instrument and connect it with the wire along the track (the air line) by means of the small copper wire,* and make the regular call—that is, actuate the index to the letter P on the dial. This will spring the alarm bells in the respective depot stations, and also in the office of the superintendent of the road. When answered he will pause the index on C D E to call attention to the code. Then he will pause on A, on C, and on N, as explained in directions for working this telegraph, after "go ahead" signal has been received.

* When the wire is hung on the poles for railroad purposes, it may be brought down on one side of each pole, (or any pole where it would be desirable to connect the instrument, etc.,) to within *five* feet of the ground—cross the pole at right angles —and be carried up on the opposite side. By separating the wire where it crosses the pole, etc., the circuit may be opened and the machine connected, or the circuit may be formed through the instrument by throwing a small copper wire over the *air line* and connecting the opposite pole of the battery with the ground.

From the code will be read opposite A, "engine off the track at or near" and opposite C N will be found "Canton Station."

Thus the information, viz., "engine off the track at or near Canton Station," may be communicated by dwelling the index on A C N. Any sentence, phrase, question or answer may be thus instantly transmitted or received if desirable to transmit or receive words faster than they can be spelled by abbreviation.

The advantages of this telegraph over others for railroad purposes, are, *its simplicity, accuracy*, and *durability;* it never runs down or requires winding; it never operated by any local power other than the power of the electro-magnet; its compactness; it may be used at any point on a railroad; gives the Roman letters, and can be operated "without previous study" by the operatives on railroads.

Rubber Pencil-Cases.—Walking-canes and hair-combs made of cautchoue have become quite common in our communities for purposes of utility and ornament. Mr. A. G. Day, the President of a Rubber Company in Semour, Ct., has successfully applied caoutchoue to a beautiful, durable, and convenient pencil-case. When sent out from the factory some cases are made entirely of rubber, and others are made having the point holding the lead and the part holding the point constructed of metel. The pencil made of rubber in all its parts, point, handle, etc., is called by railroad employés the "propeiler pencil," and has become a general favorite. The pencil with a metallic point is also furnished with an arrangement for a pen, which can be drawn up within the case so as to protect it against all accidents in carrying it about the person.

One marked feature of this pencil is that instead of becoming tarnished the friction of use makes it appear more brilliant and ebony-like. It has also the durability of gold; it is unaffected by climate, by heat or cold, by water or perspiration.

The rubber is polished by a process new and peculiar, for which measures have been taken to secure a patent. The rubber pencil is a vast improvement over most cases made of metal, and it is no wonder that it is finding a market in every quarter of the globe.

The Use of Certain Portions of Fish in the Manufacture of Soap.—This invention of improvements in the application of a new material to the manufacture of soap refers to the combination of a certain substance with the usual alkalies employed. In the manufacture of soft-soap, the patentee says: "I take any part or parts of any kind of fish or blubber; I first boil the fish or blubber and then let it settle; I then take all except the heavy deposit at bottom, which is to be thrown away or considered refuse, then strain it through a coarse cloth or sieve, put that which is left in a cloth or sieve into a press, and press all the loose matter out; the press must be lined with fine cloth. That which is left in the press is to be put in a boiler with one-fourth of tallow, and the whole is to be boiled with the usual alka-

lies for seven hours; it is then finished. This soap has the advantage of being without smell. The oil pressed out may be converted also in soft-soap, or used to burn in lamps, and gives a most brilliant light.

"To manufacture hard soap of fish or blubber, as aforesaid, the fish or blubber is to be boiled until they become a pulp; then put the pulp in a large tub to the extent of two-thirds, so as to leave plenty of room for stirring; when at blood heat, add to every hundred-weight of pulp one pound of bichrom of potash. The bichrom of potash must first be dissolved in an iron vessel over a fire. To every pound of the bichrom add one pound of water; when melted, to be thrown into the material in the tub. Immediately after, add one pound and a half of muriatic acid, and one pound of sulphuric acid into the tub; and the whole is to be then stirred or agitated sharply for one hour at least, and longer if not cooled below blood heat. If the composition is not made free or open by the before-mentioned acids, add as much fishery salt as is sufficient to set the material free or open. After the composition or material has stood twenty-four hours, the same is to be taken out of the tub, except the thick and dirty part which has become a deposit therein and which may be thrown away. That part of the composition or material which is clean is prepared for boiling in the usual way that soap is made; the only difference from the usual way of making soap with these materials is that it takes longer boiling, and which experience will teach."

Improved Composition Applicable to Ships' Bottoms, etc.—This invention consists in the application and use of a composition or mixture, formed of white lead, red lead, litharge, japanners' gold size, boiled linseed oil, and turpentine, for the purpose of protecting ships' bottoms, and other surfaces which may be coated or covered therewith, from the action of the atmosphere and sea-water, and to prevent the adhesion of animal or vegetable matter thereto.

The following are the proportions preferred by the patentees: One hundred and twelve pounds weight of dry white lead of commerce; eight pounds weight of dry red lead of commerce; six pounds weight of the litharge of commerce; three gallons of japanners' gold size; one gallon of boiled linseed oil; and half a gallon of spirits of turpentine.

These matters, when well mixed together, are applied with a trowel to the surface to be covered. If preferred, this composition can be made more fluid by adding larger portions of the boiled linseed oil and the spirits of turpentine, so that it may be applied to the surface to be covered therewith, by the aid of a brush, as common oil paint is now applied.

The patentees claim the forming and use of an improved composition, composed of the materials or ingredients hereinbefore described, for the coating of ships' bottoms and other purposes.

Improvement in Machinery for Cutting Metals.—This invention consists in employing a boss or bush, to the interior of which is fastened the tube or other article to be cut by means of wedges or screws. The tube with the bush is then held fast by a vice or other suitable means. The boss or bush forms an axis around or upon which is fitted so as to turn freely but without shake, a frame or casting, with projecting arms, levers, or other mechanical contrivance in order to obtain power, having adapted to it a slide and tool-holder, in which the tool or cutter is placed. The slide and cutter are acted upon by a screw to which is fixed a toothed wheel, operated upon

by a pinion, having on its shaft a ratchet-wheel. These wheels are connected to the frame or casting and move with it, when turned, by means of the levers, arms, or other contrivance. Upon the boss or bush is fixed a pin or projection, so placed as to come in contact with the ratchet-wheel; thus giving it and the pinion a slight rotary motion at each revolution of the frame or casting; the pinion transmits its motion to the toothed wheel, which causes the screw to turn and press forward the cutter steadily and uniformly; thus forcing itself into the tube or other article to be cut until it is severed, without any effort or stoppage on the part of the attendant.

Improvement in Producing Raised Figures upon the Surfaces of Metallic Articles, Pottery, Glass, etc.—This invention consists of a mode of producing raised figures or ornaments upon the surfaces of various articles of manufacture made of metal, pottery, or earthenware, glass, papier-maché, or other material, upon or to which such raised figures or ornaments can be fixed or attached. The figures or devices intended to ornament any such article of manufacture are engraved in metal, wood, or other material; the cutting being much deeper than is used in performing plate engraving generally—the object being to form a mould for reproducing the required devices. The engraved device is filled with a pasty composition (either colored or not) and a layer of paper or cloth is caused by pressure to take the cast of the engraved plate or mould. The paste or composition for forming the raised ornaments may be made by boiling with sulphur, red lead, and resin, until the mixture is brought into a glutinous state, and afterwards adding the requisite quantity of the earthy or other material of which the ornaments are intended to be formed. The whole is then ground or compounded together until the materials form a homogeneous plastic composition.

The raised impressions of figures or ornaments made or deposited upon paper or cloth are applied to the surface of the article to be ornamented by pressing the paper or cloth against it until the raised figures or devices adhere to the surface; after which the paper or cloth may be removed by washing or by fire. The principal articles designed to be ornamented in this way are such as are usually made of china, Parian, earthenware, stoneware, burnt or unburnt clay, glass, hardware, papier-maché, or other materials which are usually submitted to the action of fire or heat, or capable of being submitted to the action of heat, which is used when necessary for the purpose of fixing the figures or ornaments above mentioned.

Improvements in the Composition of Colors for Printing and Dyeing.—This invention relates to the preparation and application of fast colors for printing and dyeing purposes, and consists in the application and use (if a black color is wanted) of acetate of iron, weakened down or diluted to four degrees of strength (Beaumé) and used in the manner hereinafter described, and in the following proportions, namely—equal quantities of dilute acetate of iron and decoction of logwood of ten degrees of strength. Both these ingredients must be mixed together in a cold state, and then placed on a slow fire for about a quarter of an hour. After the mixture has been heated and whilst still in a heated state, "I add to it," says the patentee, "one part of the brightening mixture No. 1, which is composed of equal weights of nitric acid and proto-chloride, or salts of tin—the latter being dissolved in the nitric acid whilst the acid is in a cold state; and one part of the brightening mixture No. 2 is also added, composed of equal

weights of muriatic acid and proto-chloride, or salts of tin—the latter being dissolved in the muriatic acid. To every thirty parts of the entire mixture I add a few drops of nitrate of copper. For the production of a violet fast color I employ equal portions of acetate of iron of two degrees of strength, and of decoction or extract of logwood, or any other red dye-wood of ten degrees of strength mixed together and placed on a slow fire for about a quarter of an hour. I then add to twenty parts of this mixture, while in a warm state, one part of the brightening mixture No. 1, hereinbefore described, one part of the brightening mixture No. 2, also hereinbefore described, and one-half part of nitrate of copper. When a redder hue is desired, cochineal may be added to the decoction—the whole being heated over a slow fire for about an hour. For the production of a red tint I propose to macerate two pounds of good madder wood and two pounds of cochineal for about twelve hours in one quart of acetic acid, and to this I add two pounds of muriate of tin—the whole being placed in a warm bath and subjected to the action of a slow fire for about twelve hours. The muriate of tin extracts all the coloring matter from the madder and cochineal and produces a deep red. These colors need only be thickened with gum, starch, or other suitable thickening material to render them fit for application upon a white ground—the colors being allowed to dry in the open air after such application. When dry the fabrics are to be washed in cold water and then passed through a brightening mixture composed of one hundred parts of water and one part of the brightening mixture No. 2 hereinbefore described. In order to dye the fabrics a uniform tint or color it is merely necessary to steep them in any of the colors hereinbefore described.

"The black which I have hereinbefore referred to is generally employed for printing the outlines of the pattern or design. These fast colors are applicable to the printing or dyeing of all descriptions of fabrics. Tints of violet, from the deepest violet to the most delicate lilac, are obtainable by adding more or less thickening material.

IMPROVED MODE OF OBTAINING ALCOHOL.—This invention consists in the discovery that the saccharine principle contained in dogs-grass constitutes matter for obtaining alcohol by distillation, and by the means ordinarily employed in the manufacture of alcohol. "I take (says the patentee) about six pounds of fresh dogs-grass, which will give one pint and three quarters of alcohol, from 17° to 20° Cartier. This alcohol has an empyreumatic taste, which, however, may be easily removed by means of disinfectants, such as lime, charcoal, and carbon. The dogs-grass is first dried and afterwards reduced to powder; and in order to bruise it, I add a small quantity of cane which also causes fermentation."

IMPROVEMENTS IN THE MANUFACTURE OF ORNAMENTAL FABRICS FOR DECORATING WALLS, ETC.—This invention of improvements in the manufacture of ornamental fabrics for decorating walls or other surfaces, consists in the application of certain substances as substitutes for woollen and cotton flock ordinarily employed in the manufacture of fabrics, having surfaces somewhat resembling that class of paper-hangings known as flock papers. The substances to be employed for the purpose of producing the flock or velvet, or other ornamental appearance, are the following, viz:—First, pulverized freestone; second, metallic powders; third, sawdust produced from any kind of colored wood, also pulverized bark and tan, and whalebone reduced to powder or small particles; fourth, powdered paper of various

shades and colors; fifth, textile plants of various kinds, such as the plant known as oriental or vegetable silk, hemp, and other similar vegetable matters.

These various substances are to be applied in the state of powder to the paper, after the manner ordinarily employed for the manufacture of flock paper. When color is required to be imparted to them, this may be done by staining them either before or after pulverization; or the color may be imparted to them after they have been applied to the paper.

It is well known that, for the manufacture of paper-hangings, known in commerce as velvet-faced or flocked papers, it has long been the custom to employ dyed wool of various colors reduced to powder, which material is dusted over the surface of the paper, previously prepared with flocking varnish—the object being to impart to the paper an ornamental pattern, the surface of which will somewhat resemble velvet. This process is, however, very expensive, by reason of the various manipulations which it is necessary for the wool to undergo before applyiug it to the paper to produce the flock surface. By these improvements the same object is attained at a much less expense, and, moreover, effects of much greater variety than it was possible to produce by the ordinary plan are obtained. The pulverized freestone may be colored either by previous immersion in a bath of coloring matter, or by printing upon it after it has been applied to the paper. The pulverized metallic powders employed are obtained either by simply pulverizing metals, or ores of metals, or by reducing chemical compounds, such as metallic salts to powder. The sawdust is obtained from various kinds of wood, either dyed or undyed; or from oak-bark or tan, which are to be reduced to powder by rasping or trituration; or from wood-cuttings or shavings, stained either before or after being reduced to powder or fine filaments. Paper of various colors may be reduced to powder by rasping or grinding, or any other mechanical means by which powder of any required degree of fineness may be produced.

It is also proposed to use such metallic or other ores as contain mica or talc for the production of ornamental designs upon paper, as these substances, by their color and luster, strongly resemble gold or copper powder. These materials might be employed either alone or mixed with plain or colored sand, or with any of the other substances employed for the production of the flock surface.

Hemp and some other textile materials are also applicable for the purposes of this invention when reduced to powder, by which means the refuse of spinning is rendered useful, which is now nearly worthless.

Other vegetable matters, such as bran, straw, mosses, marine plants, lichens, and tan, reduced to powder, will also produce a very fine flock surface.

For some purposes, baked earths of various kinds and colors, when pulverized, may be employed either alone or in combination, and will produce very superior flock surfaces.

The following is the method found by experience to be the most advantageous when employing wood for the purpose of carrying out this invention: The wood is first to be reduced to shavings or cuttings by a plane or any suitable apparatus; these shavings are then to be dyed or stained, of any desired color, and finally reduced to powder by means of tan-stampers, or by a tan grinding-mill. Or, instead of operating as above mentioned, the wood-dust is produced in the following manner:—The wood is first reduced to shavings, which is pulverized by any suitable apparatus, in order to produce

a powder, or small fibrous fragments, of greater or less length; and, lastly, the product is dyed or stained of any required color. It is evident that this wood powder may be obtained from any kind of wood or ligneous matters. The powder of wood or other substance, must be sifted or screened before being employed, in order to insure a uniform degree of fineness.

When ligneous matters other than wood are to be employed, it will not be necessary, in many cases, to reduce them previously to cuttings or shavings, and in this case they are to be reduced to powder (denominated "woolly powder,") either by means of stampers or other mechanical means.

AN IMPROVED METRE FOR WATER, ETC.—This improved metre for water and other liquids consists of a wheel formed with chambers or buckets in the periphery communicating with the axis of the wheel, which is hollow, and from thence with an air-tight reservoir, filled with air by means of an air-pump, to any required pressure; or the center of the wheel itself may form the reservoir, and be filled to the required pressure. The wheel revolves in a case made to fit as closely as is consistent with the free movement of the wheel. The water or other liquid passes from a feed-pipe to the wheel, and from the wheel to the exit-pipe through openings in the case. The chambers or buckets in the periphery of the wheel are fitted with pistons, which will be driven towards the axis when the pressure of water or other liquid from the feed-pipe is on them, and the chambers or buckets will be filled. When the exit-pipe is open and a bucket is opposite to it, the piston at the back of that bucket will be driven towards the periphery by the pressure of air in the reservoir, and caused to empty the bucket.

IMPROVEMENT IN WEAVING ELASTIC FABRICS.—This invention consists in throwing two or more colored threads, or threads of different materials, in the weft to the surface at will. This object the patentee obtains in various ways; as, for example, by working the shaft or beam holding the elastic threads in such a manner as to throw either of the colors in the shuttles to the surface at pleasure, or by so working the battens as to produce the same effect. The usual way of working the shaft holding the elastic threads is to lift it up, pass one of the shuttles through the warp, next drive it down, then pass another shuttle through the warp, and so on. When the invention is carried into effect by working the elastic web-shaft, the shaft is acted upon by means of wheels, or otherwise, in such manner that it may be held still whenever it is desired to change the color or material of the surface, until two or more shuttles have been passed separately through the warp; by which means either of the colors or materials in the weft are brought to the surface at pleasure; and thus plaids and other fancy patterns may be produced without changing the motion or altering the position of the shuttles. In practice, however, in order to produce a great variety of pattern and color, the patentee prefers to adapt the machines for weaving elastic fabrics the Jacquard system. The India-rubber or elastic threads are the only threads that are connected to the lifting wires of the cards; and, according to the pattern pierced upon these cards, the proper number of elastic threads is lifted or brought to the surface, and the weft is thrown above, or below, or between these elastic threads, in accordance with the design to be produced. By using several tiers of shuttles, each tier carrying threads of a different material or color, a great variety of pattern may be produced by alternately bringing the different shuttles even

with the sheds, and, at the same time, by means of the pattern on the cards, so shifting the position and number of elastic threads as to bring the required color or material to the surface. Simple patterns, such as checks, or plaids, or stripes, may be produced independently of the Jacquard arrangement, and in the ordinary looms for weaving elastic webs, where two or more tiers of shuttles are used, by so working the shaft or beam holding the elastic threads that at every change of color or material the shaft is held stationary while the shuttles are thrown twice. The shaft carrying the elastic thread is then worked up and down together with the throwing of the shuttles, until the required length of pattern is produced; the shaft carrying the elastic thread is next held still, and the shuttle again thrown twice, which thereby brings the next required color or material to the surface. The shaft of the elastic thread is then worked in this position until the required number of this surface color or material has been thrown, when the shaft is again shifted, and both tiers of shuttles, if two tiers are being used, thrown twice, which brings the next colored weft to the surface; and this color is then worked the required number of shoots, and the elastic thread shaft is again shifted, and the throw of the shuttles again continued. Instead of the above method of acting upon the elastic threads, the battens may be worked up or down in such manner as to bring the tier of shuttles carrying the required surface color or material of weft, even with the work; so that when the shuttles are thrown, the desired color or material is brought to the surface. At every change of color or material to be thrown by the shuttles, the battens must remain up or down while either of the tiers of shuttles are thrown twice, or any other even number of times.

Immense Railroad Bar.—A triumph of manufacturing skill and ingenuity has been achieved at the Tredegar Iron Works, Monmouthshire, showing what may be done in the manipulation of iron. A railway bar was rolled 60 feet in length, all in one piece; and advancing from this success, a second bar has been rolled 85 feet 2 inches long, 75 lbs. to the yard, weighing altogether 2,130 pounds. It is now astonishing visitors to the Exhibition at Paris. No wonder, when such bars as these are produced, that we hear of fly-wheels 60 tons to regulate the movement of the rollers.

New Liquid for preventing Sea-Sickness.—This invention consists in the composition of a liquid for preventing or alleviating sea-sickness. For this purpose the inventor distils one-third of an ounce (troy) of hydrocloric acid in five ounces of alcohol, mixes the product in thirty-two or thirty-eight ounces of water, and then sweetens the liquid with syrup of sugar. By preference, however, he composes the liquid of two and two-thirds of an ounce (troy) of dry chloride of lime mixed with eight ounces of water, to which ten and two-thirds of an ounce of alcohol are added. The whole is distilled by ordinary means, until five ounces and one-third of the liquid are obtained as a product. He next mixes this product in a stone or glass beaker with thirty-two or thirty-eight ounces of water, and sweetens it with syrup of sugar; and adds to one or the other of these liquors a few drops of essence of mint or bitter almonds, giving it a rose-colored tint by a weak solution of cochineal. One or two table-spoonfuls of the liquor, thus prepared, should be taken prior to going on board, when it will in most cases prevent sea-sickness; if taken during the retching, it will greatly reduce its violence and the pain arising from the sickness.

PORTABLE HAY AND COTTON PRESS.

Among the various means used in pressing hay and cotton, one that has recently attracted our notice commends itself very highly to our judgment. It is the invention of Mr. Pells Manny, Wadam's Grove, Ill. It consists of a large box, mounted on wheels, so as to be portable, the contents of the box, whether hay or cotton, being powerfully compressed with a pair of levers, acting in harmony. It is not liable to get out of order, and can perform the service required of it in the field in which the crop grows as well as elsewhere, and thereby saves often the time and cost of handling it. The following description, in connection with the engravings, will explain the press and its operation.

Fig. 1

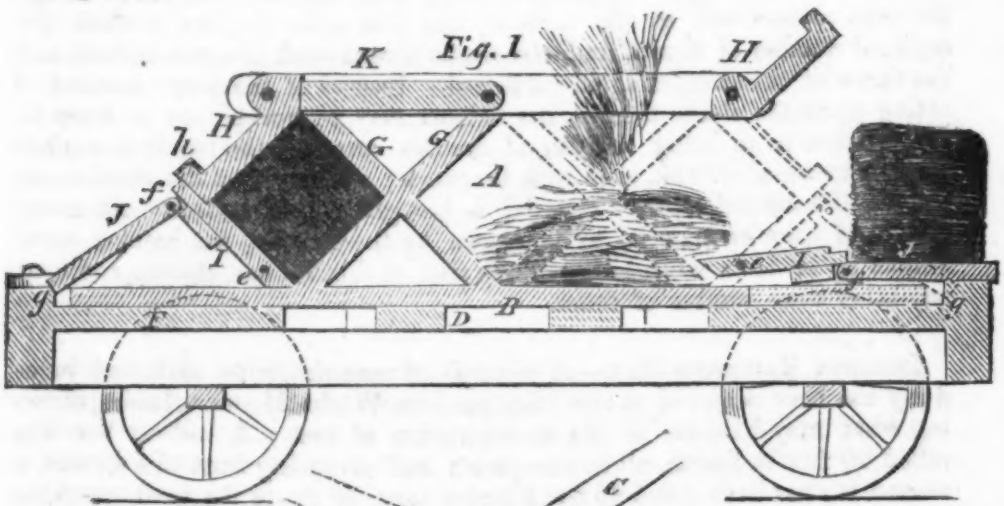

Fig. 2

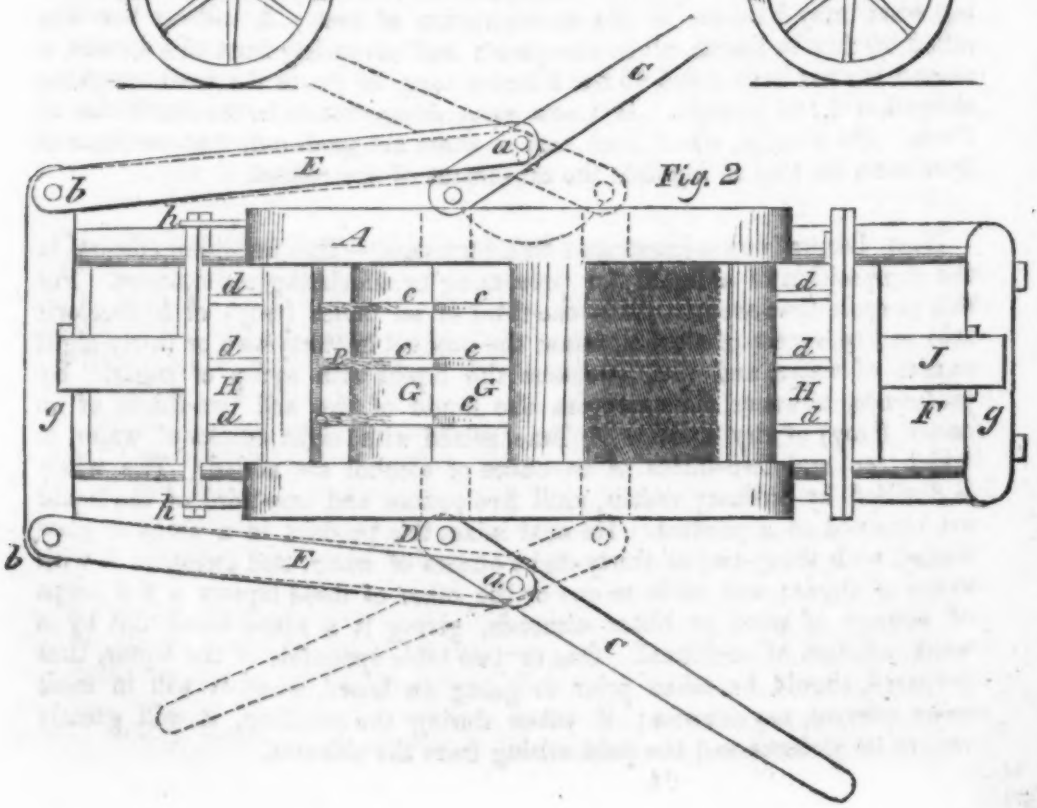

Fig. 1 is a side view of this press. Fig. 2 is a vertical longitudinal section of the same, the plane of section being through the center. Fig. 3 is a plan or top view.

A represents a rectangular box or case, having a sliding bottom B, to each side of which, at its center, a lever C is attached by a pivot. The levers are attached to the ends of a cross piece D, which is secured to the under side of the bottom B. The fulcra of the levers C are at the ends of levers or arms E E, as shown at A, figs. 1 and 3, and the levers or arms E E are secured by pivots, B, at one end of the base or platform F, on which the box or case A is secured.

To the upper surface of the center of the sliding-bottom B there are secured two followers G G, which are so inclined as to cross or intersect each other at right angles, (see fig. 2.) These followers correspond in width to the interior of the box or case A, as shown in fig. 3. The upper parts of the followers above the points of intersection have longitudinal slots or recesses (*c*) cut in them as shown in fig. 3.

To each end of the box or case A, and at its upper part, there is attached a door, H, which is so arranged as to be allowed to spring up and down, the upper cross-pieces of the doors having their ends fitted in the top and side pieces of the box or case, so as to turn therein. The doors, H, have slots or recesses, *d*, cut through them, as shown in fig. 3.

The ends of the sides of the box or case A are not vertical, but inclined so that when the doors H H are closed or down, they will also be inclined at an angle of 45°, corresponding with the inclination of the followers. The doors, H H, when closed, cover only about one-half the ends of the box A, and are secured to it by pivots *e*, (see fig. 2,) which pass through the sides of the box and into the sides of the doors. The doors, I I, when close, are also inclined, but in a reverse position to the doors H H, (fig. 2.) The upper ends of the doors I rest or bear against the lower ends of the doors H, and the doors I, are secured in a closed state by bars J, one end of which is secured by pivots *f* to the upper ends of the doors I, while the opposite ends fit in notches or recesses G, in the ends of the base of platform F, fig. 2. The upper doors, H H, are secured in a closed state by hooks, *h*, which catch over the lower cross-pieces of the doors, as shown in fig. 2.

A lid, K, is attached to the upper part of the box, and near its center.

The operation of the press will be readily understood. At the commencement of the process, the doors H and I, at each end of the box, are closed, and the hay to be pressed is placed in the box, at one side of the lid k, and the lid is then closed over the hay. Power is then applied to the levers C, and the sliding bottom B is moved, as well as the followers G G, and the hay is compressed in a square bale between the doors H and I at one end of the box, and the followers G G. When the hay is compressed, the doors H and I are opened and the bale withdrawn. The slots *c* and *a* afford facilities for hooping the bale; while this is going on, hay is placed in at the other end, with which the same process is to be carried on.

By the use of this press much time is saved, preparations being made for the second bale while the first is yet in the press. And again, such is the arrangement of the followers as to require just the required motion, without any loss of time in replacing them. And again, the pressure is so distributed among the doors and followers as not to overstrain any single part of the machinery.

Miscellaneous.

THE ERIE RAILROAD.

We have repeatedly referred to this road as abounding in splendid scenery and interesting historical associations. Even where the general view is uninviting, a single point possesses great attractions. For example; about 10½ miles from Piermont, in an uncultivated neighborhood, is a brown stone gothic cottage, two stories high, of elaborate design, and finished in excellent taste, built by Mr. Thom, the self-taught sculptor of the famous and wonderfully life-like group "Tam O'Shanter and Souter Johnnie." The garden contains a full-sized statue of Washington, by the same hand. Such associations as these are not of small account, but ought to be cherished and strengthened and multiplied.

Passing Suffern's Station, 32 miles from New-York, we enter upon grounds rich in revolutionary associations. Washington and his army were encamped here in 1780, and it was here that many of his letters, since published, were written. Expecting an attack from the enemy, he took up a position a mile and a half beyond Suffern's Station, at a place where "the pass" is only a quarter of a mile wide. Some of the old intrenchments are still visible on the eastern side of the road. Washington's head-quarters were at a farm-house, with a "gambrel roof," half a mile eastward from Suffern's, and north of the road.

Two miles further on we come to the Ramapo Iron Works, the first place in the country where cut nails were made. A file factory and a cotton mill have also been erected. Sloatsburg, near by, contains two cotton factories. Cotton twine is manufactured there and to a large amount. It is the invention of the proprietor, Mr. Jacob Sloat. Twelve miles from Sloatsburg is Greenwood Lake, to which a stage runs. This is a beautiful sheet of water, eight miles long, the favorite resort of anglers. A good hotel furnishes accommodations to visitors.

The Augusta Iron Works are passed soon after, at which was forged the chain placed across the Hudson at West Point to check the progress of the English fleet.

The Munroe Iron Works are also near, 42 miles from New-York. The ore wrought there, which is found at a distance of about six miles, is pronounced superior for cannon.

Turner's, 47 miles from New York, is the last stopping-place ere you enter that region so famous for the products of the dairy, Orange County.

Monroe, two and a half miles further on, is remarkable as a milk depot; 200 cans of milk are sent from this station to New-York every day; each can averaging about 15 gallons. Some of the farmers keep 80 or 90 cows. The freight is half a cent a quart.

Goshen, 59½ miles from New-York, the one-half shire of the county, is the most famous depot of milk and butter on the road. It is a thriving place. During the Revolution a portrait of George III., occupied a place over the court-house entrance, but on the arrival of the news of the "Lexington fight," it was torn down. This is also the scene of a most bloody battle with the Indians, led by the famous John Brandt.

Would travelers study these matters a little, they would greatly increase their pleasure in traveling, and deprive many rude and uninviting scenes of the tedium which they often excite.

THE MANUFACTURE OF WATCHES—A watch is no longer, as it was formerly, an object of luxury, destined exclusively for the rich; it has become an article of the first necessity for every class in society, and as, together with the increased perfection of this article, its value has in the same time considerably diminished, it is evident that a common watch, which will exactly indicate the time of the day, is actually, by its low price, within the reach of almost every individual, who will likewise feel anxious to possess one.

For this reason, and in proportion as commercial and maritime relations are extended and emancipated from the trammels in which the great central marts of commerce have involved them, so will distant nations become civilized; and it may be fairly anticipated that the art of watch-making will form part of the great current of improvement.

The number of watches manufactured annually in Neufchatel may be calculated from 100,000 to 120,000, of which about 35,000 are in gold, and the rest in silver.

Now supposing the first on an average to be worth $30, and the others $4, it would represent a capital of $1,390,000, without taking into consideration the sale of clocks and instruments for watch-making, the amount of which is very large.

The U. S. of America consume the largest quantity of those watches. With the exception of gold and silver for the manufacture of the watch-cases, the other materials for the construction of the works or mechanism of the Neufchatel watches are of little value, consisting merely of a little brass or steel. The steel is imported from England, and is reckoned the best that can be procured; the brass is furnished by France.

With respect to gold and silver the inhabitants of Neufchatel have had for a long time no other resource but to melt current money, until they received gold from England, which the English merchants receive from California.

The number of workmen who are employed in watch-making is estimated at from 18,000 to 20,000, but it is difficult to arrive at the exact number, as the population employed carry on the business in their own houses.

The spirit of adventure is very strong among the inhabitants of the Jura Mountains. A great many of them have traveled into very remote countries, whence some have returned with considerable fortunes.—*Merchant's Magazine.*

NATIONAL BOOK ESTABLISHMENT IN AUSTRIA.—In the Austrian Department of the French Exposition, there is a most remarkable exhibition. The *Staatsdruckern*, as it is called, is a vast manufactory for everything connected with book-making and engraving, and is under the imperial government, which carefully fosters it as the French Government fosters the Gobelin and Sevres. The collection of Paris comprises an immense number of interesting specimens, among which are imitations in chromo-lithography of some of the pictures of the old masters, so extraordinarily perfect, that it is difficult to know them from the original which hang by their sides. There are also wonderfully fine anatomical plates, maps of immense size, and elaborate workmanship. The annual expenses of the establishment are more than a million florins, and the receipts about 1,200,000 florins. The type stock comprises more than 600 sorts and degrees of native letters, and 120 alphabets of foreign languages. The whole stock weighs 450,000 pounds, which, reckoning 50,000 letters to the 100 pounds, gives 225,000,000 as the total number of letters. The quantity of paper annually used in the

establishment is over 200,000 reams, and the number of persons employed is nearly eight hundred.

Profit of Raising Sweet Potatoes.—Two agriculturists of Alton, Ill., engaged in the cultivation of sweet potatoes, publish an account of their profits during the past season. They planted twelve acres of potatoes, the expenses of which, delivered in market, were $197 50. The total amount of sales were $2,200; leaving $2,012 50 for net profits. This gives an average profit of $167 70 per acre.

Lemons.—It is strange that no one has entered into the production of this fruit upon the coast of Texas as a regular business. The production of lemons alone would be a profitable employment. There is no danger of glutting the market, however large the product may prove. Last year there were imported into Boston, from the Mediterranean alone, 46,000 boxes of lemons and 47,000 boxes of oranges. These are but insignificant items in the total imports of the United States during that time. Upwards of thirty dollars worth of lemons have been sold in a single season from a young tree in Galveston. No trouble but that of planting is requisite.—*Civilian and Gazette.*

Hats ! Hats !—At the New Hat Company's store, 146 and 148 Nassau street, we find Mole-skin hats of excellent quality for $3, and Drab Beavers at the same price. Our country friends will always find their hats of one price, as well as near the same quality as can be made. All the varieties of soft hats and fancy caps are to be had there, and at low rates.

The Value of the Grass Crop.—Governor Wright, of Indiana, in his recent address before the New-York State Agricultural Society, says our grass crop is not properly appreciated. No crop, he says, approaches so near a spontaneous yield, and none yields so large a profit. The hay crop of the United States in 1850 was over 13,000,000 tons; that for 1855 he estimates at 15,000,000, which was worth $150,000,000, while the whole cotton crop is valued at only $128,000,000. Of this crop more than half is produced by the four States, New-York, (which yields one-fourth of the whole,) Ohio, Indiana, and Illinois. The grass crop which is used for pasturage, is at least as valuable; so that this single herb is worth annually over three hundred millions of dollars. Few people will believe that the grass crop of this State is worth more than its wheat, and yet statistics show that such is the case.

An Accomplished Blind Man.—The *Journal de Chartres* gives an account of a water-mill, in the hamlet of Olsieme, near Chartres, built entirely by a blind man without either assistance or advice from any one. The masonry, carpenter's work, roofing, stairs, paddle-wheel, cogs, in a word, all the machinery pertaining to the mill, has been made, put up, and set in motion by him alone. He has, also, the above journal asserts, made his own furniture. When the water is low and the mill does not work, our blind miller becomes a joiner, and also a turner, on a lathe of his own invention, and so he makes all manner of utensils, and pretty toy windmills for the juveniles. He lives quite alone, sweeps his own room, and cooks his own dinner; his mother, who has 15 children to care for, lives a mile off, and does not trouble her head about "her blind boy," for "he earns his bread now," she says, "and does not want her." In 1852 this blind miller was rewarded

with a medal by the agricultural society of the arrondissement, for a machine serving the double purpose of winnowing corn and separating the best grains from the common sort.

ALUMINUM, THE NEW METAL FROM CLAY OR BRICK.—A large bar of this new metal, presented by the Emperor of the French, is now on exhibition at the Polytechnic Institution, London. This rare gift evokes the admiration of all who see it, not only on account of the external silvery appearance, but also from its extreme lightness, toughness, malleability, and durability, difficult fusibility and absolute indifference to that tarnisher or destroyer of metals, oxygen, a stern resistance to the action of water, and a chemical contempt for that bane of large cities, sulphuretted hydrogen. Aluminum, it is reasonable to expect, will form all our culinary vessels; no more copper or brass pans to poison our acid sauces, pickles, condiments and confectionery. —*London paper, Sept.* 8.

THE CAMEL EXPEDITION.—The Washington *Star* has some particulars of the progress of the expedition to the Levant in search of camels to be used on the western deserts between the Atlantic and Pacific oceans. The U. S. store-ship Supply was at Tunis on the 4th of Aug. Major Wayne, the Chief of the expedition and the officers of the ship were presented to the Bey of Tunis, who, on hearing of the object of the expedition, immediately sent them a present of two fine camels. They were gratefully accepted in the name of the President of the U. S. The supply left for Malta on the 10th of Aug., courteously taking as passengers the widow and daughter of Sir. Edward S. Baynes, late English Consul General. The Supply also took on board a beautiful block of marble from the Ruins of Carthage, for the Washington Monument, presented by Mr. David P. Heap, son of our late Consul. The block is of variegated—red and white—marble, and was cut from one of the columns of the temple of Esculapius.

GOLD IN VERMONT.—A friend who has recently visited the gold diggings in Plymouth thus writes:

"Yesterday I visited the gold diggings in Plymouth, and was in season to see one man gather up the value of $5 from only half a day's labor! But this seemed to be but an extra dose, as the general average is not far from $1 per day each. . . . . Mr. Hankerson showed me $15 of "dust," the proceeds of the last week. Notwithstanding the present good doings, I am quite fearful that it will be but a short time before nothing will be said or done at these diggings; the gold seems to be too deeply imbedded in the earth to make it profitable to search only in the small streams that wash from the surrounding hills. This proves to be the case in Bridgewater and all the 'placers' on Quechee.—*Republican.*

WEAVING BY ELECTRICITY.—An invention that promises to create a revolution in the manufacture of silks, linens, cottons—in fact of all woven articles—has just been perfected here, and a specimen is now on its way to the Paris exhibition. This is the electric loom, invented by Cavaliere Bonelli, inspector of telegraphs in the Sardinian States. Some time since I noticed to you his application of electricity to the jacquard loom, whereby he was enabled to dispense with cards and much of the manipulation necessary for the old system of weaving; but in the more perfected specimen now about to be exhibited, the inventor has added steam power to supersede manual

labor, so that one intelligent workman may attend to many machines at the same time, and the operation of making all kinds of patterns will be as easy, cheap and expeditious, as printing and knitting in different patterns is also performed with similar instruments.—*Turin correspondent of the Times.*

Failure of Nasmyth's Monster Gun.—We regret to learn that Mr. Nasmyth's wrought-iron gun has proved a complete failure, and this not on account of the mechanical difficulties which had to be encountered—formidable as they were—but from a most unexpected peculiarity in the material employed, when brought together in so large a mass as was necessary for Mr. Nasmyth's purpose. It seems that wrought iron, so tractable under all ordinary conditions of working, cannot be welded together in very large masses without undergoing a change in its molecular arrangement exceedingly injurious to its tenacity. As we understand the explanation which we have received on this point, an immense mass of iron like that which Mr. Nasmyth has welded together continues so long in an incandescent and soft state that a process analogous to crystalization takes place within its substance, whereby the fibrous texture, from which it derives its tenacity, is destroyed, and it becomes even less capable than cast iron of resisting the explosion of a heavy charge of gunpowder. We understand that, in addition to the unfavorable result obtained by Mr. Nasmyth at Patricroft, another experiment of a similar nature made under the direction of government has proved a complete failure from the peculiarity in the material to which we have alluded; a large gun which had been completed was found utterly unfit for use. Indeed, we believe it burst into many pieces on the first trial. Mr. Nasmyth's experiment has consequently been abandoned.—*Manchester Guardian.*

Remarkable Properties of Gutta Percha.—The following statements of experiments made upon gutta percha vestments at the United States naval laboratory will give additional value to preparations of that gum. The Washington *Star* says that, in consequence, the Navy Department has ordered a supply of such clothing to be distributed among the East Indies, African and Gulf squadrons. Fabrics of the same kind have been freely introduced in the military service: "Six pea-jackets, made of gutta percha fabric, were baled in the same manner as the cloth clothing for the navy, under a pressure of thirty tons. They were then placed over a steam boiler in the yard, and remained for sixteen days subject to an average temperature of 190 degrees, at times as high as 212 degrees. On examination the garments were found in the same state as when packed. There was no adhesion of the folds nor any decomposition of the gutta percha. One jacket was dipped in water, rolled up and sewed in the corners, (but not pressed) and subjected to the same heat for three days. On examination this also was found uninjured."

Anecdote of a Sheep.—Anecdotes of animals are always amusing; and moreover if observed accurately and told without embellishment, may some day serve to solve a great problem in philosophy—the distinction, namely, between the spirit of a man that goeth upward and the spirit of a beast that goeth downward to the earth—a problem that the great Bishop Butler could not solve, and left a blemish in his argument, but a monument to his candor. The subject of the one I am going to tell happened many years ago, when I was an urchin of eight or ten, but I remember it well.

One fine summer morning it was my province to aid in driving a flock of sheep to the brook, to be washed, preparatory to shearing. The man who had charge of them led the procession with the salt-dish in hand, in which he ostentatiously rattled some lumps of salt, and from time to time made pretense of throwing a handful on the ground, to draw the flock onward from place to place, while I followed to drive up the loiterers.

The old patriarch of the troop, a fine old buck, led the van of the quadrupeds, and carefully examined every spot where the false motion of throwing salt was made, till he was fully satisfied in his mind that no salt was deposited. He then paused, shook his head with its ample honors, and waiting till the shepherd was about a rod in advance, charged upon him from the rear with his whole momentum, fairly raising him off his feet. I saw, and from the first comprehended the manœuvre, but there was so much fun in it it was impossible to give the alarm; and when the man turned to "blow me up for my tacit complicity, I was rolling on the green sward in a convulsion of laughter so contagious he was forced to join in it, and let me off without a rebuke.

Will it do to attribute to so simple an animal as a sheep, so high a moral sentiment as indignation at deceit? Perhaps not; but we may at least make the "practical interference" that those having charge of flocks cannot securely lead them long with mere occasional handfuls of—wind.—*Church Journal.*

Process for Rendering Porous Substances Waterproof.—Leather, cloth, earthen ware, paper, etc., may be made waterproof by causing them to absorb gutta-percha, in the mode secured by this patent. The process is as follows:

Take one part by weight of dry gutta-percha cut up into small pieces, and add four parts of sulphuret of carbon. Keep this mixture at a temperature of about 77° Fahr., and agitate it at least six times in twenty-four hours. In two days the solution will be ready for use. The solution is placed in any suitable closed vessel, which will admit of being heated in a water bath, and of the evaporation and condensation of the sulphuret of carbon taking place. The goods to be waterproof are wet down in this vessel, and immersed in the solution; and the vessel is then placed in a water bath and heated for five hours, without, however, carrying the temperature to the boiling point. When the temperature of the bath has fallen to about 85° Fahr., the goods are removed and allowed to drain; they are then placed in another vessel, which is heated in a water bath, in order to evaporate and condense the remainder of the sulphuret of carbon. The goods are afterwards removed from this vessel and dried, and are submitted to pressure or not, according to their nature. If the substance to be saturated are too compact to absorb the solution by simple immersion, such, for instance, as blocks of wood, it is neessary to force it in by exhausting the air from the wood, and by prosure applied on the surface of the solution, as is done in the preservation of timber.

Physic to Colts at Weaning.—Many persons are of opinion that it is unnecessary to administer physic to foals and young horses; but a few observations will dispel that notion. After a foal has been weaned and deprived of its mother's milk, the liver very frequently assumes an inactive, sluggish disposition. The coat indicates this by its harsh unhealthy appearance, and the animal gives evidence of being what is termed hidebound.

Very often the legs will fill from an irregularity of the circulation, consequent upon the state of the liver. In such cases one or two mild doses of aloes becomes indispensable.

Coal of the Ohio Valley.—We learn by the Railroad Record, Cincinnati, that about 60,000,000 bushels of bituminous coal are raised and consumed in the Ohio Valley. The coal field of the Ohio Valley is the largest in the world; the coal surface amounting to 99,000 square miles. That of Great Britain only amounts to 12,000, and from it no less than 925,000,000 bushels are raised every year. It is the source of England's great wealth; without it her manufactures would be very insignificant. The Ohio Valley must be the great iron shop of the world some of these days.

A Century Plant Twenty-six feet High.—There is now to be seen at Savannah, Georgia, an aloe-tree, otherwise called a century plant, twenty-six feet high, and containing more than a thousand buds, all of which are ready to bloom. This remarkable tree is a native product of Wilmington island. Of its history the first fifty years of its existence, we are not informed. Since 1804, when it was transplanted upon the island, it has been thriving, the admiration of all, on the farm of Col. Hunter.

Blanketing Cows.—A correspondent of the *Rural Intelligencer* who has been traveling through Holland, says:

"Great care is taken of their cows, both in the winter and in the summer; and in a lowery wet day, you will see the cows in the field covered with blankets; ay, even more commonly than a horse is blanketed here in the winter. This care is well repaid by a greater flow of milk and a less consumption of forage."

Iron Boats for the Panama Bay.—The Morgan Iron Works have just completed the second iron lighter for the Panama Railroad Company. The dimensions are: length, 75 feet; beam, 20 feet; depth, 5 feet; and built expressly for light draft, great strength, and facility of transhipment. The first lighter of this class was shipped in sections by the schooner Pedee, on the 20th ult., for Aspinwall. From Aspinwall it will be transported by railway to Panama. Four other lighters are now under way, and will be sent out as soon as possible to meet the increasing freight on this great highway of nations. Mr. Watson, the Company's Engineer, goes by the George Law with a strong force of mechanics to erect these boats at the Company's Works on Panama Bay.

NEW BOOKS.

Outlines of Physical Geography. By Geo. W. Fitch. Illustrated by six maps and numerous engravings. Second edition. New-York: J. H. Colton & Co. 1855.

This volume is intended for the use of schools, and claims to be the first published in this country. In this there must be a mistake. The capital treatise of Guyot cannot be thus ignored. For, though it is not intended exclusively for schools, it is perfectly adapted to our higher classes, and cannot easily be improved. But this volume is en-

tirely different from that in structure, and is quite full in some points which Guyot scarcely touches; while in other points Guyot is more thorough. Mr. Fitch has brought together abundant materials from various sources, has well arranged and classified them, has given them an attractive form, with clear and well-drawn illustrations, and deserves high commendation. It is best adapted for scholars somewhat advanced; and, indeed, we doubt the propriety of placing any text-book on this subject in the hands of those not sufficiently trained to appreciate the value of the information to be acquired from it. This book is well bound, on good paper and type, and ought to satisfy even those who are very particular about such matters.

God Revealed in the Process of Creation, by the Manifestation of Jesus Christ, including an Examination of the Development Theory contained in the Vestiges of the Natural History of Creation. By James B. Walker, author of Philosophy of the Plan of Salvation. Boston: Gould & Lincoln. 1856. 273 pages.

The author has executed the task he undertook in a very thorough manner. The drift of the argument is to show the same unity of plan and design, running through all time, from the very beginning to the present. When the atmosphere was formed it was adapted to its present uses. When the world was in chaos elements essential to man's existence were formed, as seen in the coal beds, etc. Thus all the natural laws have uniformly resulted in promoting the accomplishment of the great end in view, the creation of man. The connecting links between this state of things, man's condition, and the New Testament, and the plan of salvation it sets forth, are ably exhibited. We heartily commend the work as skillful in its plan and able in its development and illustration.

The Christian Life, Social and Individual. By Peter Bayne, M.A. Boston: Gould & Lincoln. 1856. 528 papes, 12mo.

This work is written with great ability and possesses extraordinary interest. It illustrates the power of the Gospel upon the lives of persons not remarkable for power of intellect, as Howard, Wilberforce, and Samuel Budgett, as also upon the greatest minds, like John Foster, Thomas Arnold, and Dr. Chalmers. These admirably written and exceedingly entertaining biographies, are followed by treatises upon the Positive Philosophy and Pantheistic Spiritualism. We commend this book as possessing the very highest claims and able to exert the strongest attractions for cultivated minds.

Battles of the Crimea, including a historical summary of the Russian war, from the commencement to the present time, giving a graphic picture of the great drama of war, its bloody encounters, thrilling incidents, hair breadth escapes, fierce enthusiasm, individual daring, personal anecdotes, etc., etc., embracing a new plan of Sevastopol, its fortifications, batteries, position of contending forces, siege works, etc., and a superb map of the seat of war. 10th edition. New York: O. F. Parsons, 140 Nassau street. 1855. 163 pages.

We have given this long title in full because it tells the whole story. The author has well done what he here sets forth, and we doubt not its reliability. The book sells very rapidly.

We have also on our table some new and excellent maps of the Crimea, Sevastopol, etc., published by Mr. O. F. Parsons. One sheet contains a map of the Crimea and the Sea of Azoff, on a large scale, with a smaller map of Europe. Another sheet presents a view of the late successful attack on the Malakoff and the Redan, with an Engineer's Typographical Range Map of Sevastopol, showing the position, direction, and extent of range of the guns, and all the important features of the place.

Voices from the Silent Land; or, Leaves of Consolation for the Afflicted. By Mrs. H. Dwight Williams. Boston: John P. Jewett & Co. 283 pp., 12mo.

These voices were "collected in the freshness of a very deep affliction," and are the

products of some of our most gifted minds—as Hemans, Croly, Halleck, Montgomery, Howitt, Barton, Bryant, Longfellow, Payson, Thomas à Kempis, and many others, who, in poetry and prose, have given utterance to the language of, or counsel adapted to, a stricken heart. We need not add that its pages abound with beautiful passages, and expressions of deep religious feeling.

LAKE SHORE; or, The Slave, the Serf, and the Apprentice. By EMILE SOUVESTRE, Author of the "Attic Philosopher in Paris," etc. Crosby, Nichols & Co., Boston. 1855. 239 pp.

This is a translation from the French, and consists of three tales, illustrating history, and showing the progress of society, in successive periods. The first is the condition of a conquered nation in the times of the ancient Roman; the second, of serfdom; and the third, the apprentice. It is very well written. The language is indeed beautiful; and it well deserves the careful attention which every intelligent reader, who begins it, will certainly give to it.

KLOSTERHEIM; or the Masque. By THOMAS DE QUINCEY. With a Biographical Preface, by Dr. Shelton Mackenzie. Boston: Whittemore, Niles & Hall. 1855. 258 pages.

This story is laid in Germany, during the "Thirty Years' War," and is written in De Quincey's best style. And perhaps we cannot give a better idea of it than by quoting from the "Biographical Preface" of Dr. Mackenzie, in which he says: "The leading elements and characters of fiction, wild adventure, guilt-born terror, enduring love, and secret mystery, pervade the whole composition, which reads like a true narrative of actual events, so progressive are the incidents, so complete the *vraisemblance*. In some scenes the limits of the supernatural are reached, and the effect is startling," etc.

A CENTURY OF PURITANISM AND A CENTURY OF ITS OPPOSITES, with results contrasted, to enforce Puritan principles, and to trace what is peculiar in the people of Lynn to what is peculiar in its history. By PARSONS COOKE, Pastor of the First Church in Lynn. Boston: S. K. Whipple & Co. 1855. Parts 1 and 2.

We have long known Dr. Cooke as one of the most able men and powerful writers in his profession, in this country. He has here turned his great talent to a careful and thorough investigation of the character of Puritanism, as shown by its fruits, in comparison with the fruits of its antagonisms. That this is done with great ability, no man of sense will deny. His statements of facts may be disputed, the sources of his information may be attacked, but his logic is plain and straightforward. Although with its denominational bearings we have no concern, as journalists; yet, as an able discussion of a great question, interesting to all and appropriate to all places, this volume deserves, and will no doubt receive, careful attention and rigid scrutiny. But if false in the lessons which it inculcates, we are quite confident that a man of ordinary powers only had better leave it to others to point out such defects. Till this is done, it will be read with profound atttention.

EARLY RELIGIOUS EDUCATION, considered as the divinely appointed way to the regenerate life. By Wm. G. Elliot, Pastor of the church of the Messiah, St. Louis. "Feed my lambs." Boston: Crosby, Nichols & Co. 1855. 128 pp.

"To deny the doctrine of regeneration and to remain a Christian, indicates either a misuse of words or an imperfect knowledge of the Scripture." "There is an essential, radical, and thorough difference between the religious and the worldly life." "But how absurd it is to speak of it as a renovation suddenly and completely wrought." "It is seldom effectually accomplished unless when it begins by the Christian education of childhood, and goes on under the exercise of Christian influences through the whole life." Nor is the whole life too long for the result to be attained. "Educate mothers!" These and kindred sentiments are enforced in this little treatise in an excellent spirit

and in a pure and simple style. The book is also remarkably attractive in its appearance.

Louis Fourteenth and the Writers of his Age; being a course of lectures delivered in French, to a select audience in New-York. By the Rev. J. S. Astie. Introduction and Translation by Rev. E. N. Kirk. Boston: John P. Jewett & Co. 1855. 12mo, 413 pp.

No one at all familiar with French history will neglect a well written essay upon this most important reign. The time of Louis XIV. is "one of the great epochs of European history," and the leading men of that period are and ever will be worthy of the study of all who come after them.

The introduction to this volume by Mr. Kirk, extends over three pages, and is well worth the price of the book. It is admirably written. The lectures, eight in number, are replete with valuable thoughts well expressed. Each lecture gives a sketch of one of the great men of that reign. Louis XIV., Blaise Pascal, Corneille, Fenelon, La Fontaine, Boileau, Racine and Moliere, each are described and analyzed. The author presents this epoch partly in its political but chiefly in its literary features.

Just now, when French tragedy occupies so prominent a place in the view of many in our chief cities, this work possesses peculiar attractions. But at all times it may be regarded as a gem, by the scholar and the statesman.

Conversation; its Faults and its Graces. Compiled by Andrew P. Peabody. Boston: James Munroe & Co. 1855. 130 pp.

Mr. Peabody is an admirable writer and a finished scholar. No one is more competent than he is for such a service as he has here performed; of course it is done well. It is the best treatise or collection of treatises on these topics we have ever seen. It contains a lecture by Mr. Peabody, one by Francis Trench, delivered at Reading, England, "A Word to the Wise," by Parry Gwynne, followed by the exhibition of many improprieties committed in speaking and in writing, by Mr. Peabody. We heartily commend this little volume to all, and especially to our young friends.

Physical Geography for Families and Schools. By P. M. Zoralin, author of "Recreations in Physical Geography, etc. Revised, with additions, by Wm. L. Gage, late master of the Taunton High School. Boston: James Munroe & Co. 1855. 153 pp.

This is an excellent little treatise, embracing something upon every department of Physical Geography. It is necessarily very concise and elementary, but perhaps full enough for many classes in our schools. It is illustrated by numerous maps and diagrams. It is well executed by the enterprising publishers.

Glenwood, or the Parish Boy. Boston: Shepard, Clark & Co., 110 Washington st. 1855.

This is a well written story of a parish boy, as the title suggests, who sees a great variety of experience, much of which is unfortunate, but which ends in "home and happiness." Some of the scenes are sad, and others are full of fun. We would say an encouraging word, not only to the writer of the story, but bespeak the favor of the public for the young firm by whom it is published. With the "senior" of it, we are well acquainted, and are quite sure that authors who put their confidence in him will not find it misplaced, and that those who do business with him will find him accomplished in his trade and scrupulously attentive to all who have claims upon his time or efforts. God speed them.

NEW MUSIC.

Baker's Church Music. A Collection of Hymn Tunes, Chants, Sentences, and Anthems, selected and arranged from the works of both ancient and modern masters

with many original compositions. By B. F. Baker. Boston: John P. Jewett & Co. 1855.

The introduction at the beginning of the book is capital. The book itself contains a great deal of most excellent music. Mr. Baker is a man of excellent musical taste, and has composed many very pretty pieces of music, some of which appear in these pages. We find in it but few of the "old tunes;" but this may be better than to buy the same music over and over again, as we have been in the habit of doing, from necessity, in years past. The old collections may be retained, while these new selections, compositions, and arrangements add to the variety, and give excellent opportunities for practice.

Symphonia Grandæva Rediviva: Ancient Harmony Revived; being a Selection of Choice Music for Divine Worship, taken from old and approved authors, published as originally written by Billings, Belcher, Edson, Holyoke, etc., etc., and from several European authors, particularly from W. Tansur's original works. Fourth edition, revised. Boston: S. K. Whipple & Co. 1855.

The peculiarity of this collection of church music is, its republication of the music which our fathers used to sing, and in which, perhaps, some of us joined, and perchance became lost, sometimes, in the complicate labyrinth of the fugue. Complaint, All-Saints New, Ocean, Greenwich, Sherburne, Rainbow, Psalm 34th, New-Jerusalem, to say nothing of Plainfield, Enfield, Mortality, and others, will bring up in many minds associations connected with the very spring-time of life. Those who are fond of this kind of music, will find this, comparatively, the only book worthy of their attention, published in these later times.

Piano Fortes.—Steinway & Sons, Walker street, New-York.

These well known manufacturers have made sundry improvements in the construction of their instruments, which they regard as of great value. To test the real value of these, as they ought to be tested, requires a longer and more intimate acquaintance with them than we have been favored with; but they certainly make an excellent instrument. At the award of premiums, the committee of the American Institute bestowed upon them the first prize. This is evidence of merit, the importance of which is obvious, from the effort made on all hands to obtain it and to publish it. We have had occasion to express our regrets that farmers and mechanics often seem to strive more to get a premium than to deserve it. We do not intend to intimate that these skillful mechanics have made any effort for a prize beyond the entry of their instrument. All the pianofortes they make may be as good as those on exhibition. They are men of character, and are worthy of high respect. We recommend all about to purchase inztruments, to examine their assortmeat.

List of Patents Issued

FROM TERMINATION OF PREVIOUS LIST TO NOV. 6.

C. J. Cowperthaite, for improvement in sewing machines.

Larkin T. Atkins, of Page county, Va., for machine for guaging, measuring, etc., staves.

Phillippe L. Bernard and Jos. Albrecht, of New-Orleans, for improvement in the manufacture of acid sulphate of lime.

Thos. Bell and Henry Scholefield, of South Shields, England, for improvement in the manufacture of borax from native borate of lime. Patented in England, July 25, 1854.

Chas. Bishop, of Norwalk, Ohio, for improvement in corn shellers.

John A Bills, of Troy, for improvement in washing machines.

John Blanc, of New-Orleans, for improvement in preparing vegetable fibre.

Henry E. Canfield, of New-York, for improvement in cut-off valves for oscillating engines.

John G. Dunham, of Steubenville, Ohio, for improvement in churns.

Chas. Davenport, of Watertown, Mass., for improved apparatus for heating buildings by steam.

Stephen Elliot, of Wayne county, Ind., for improvement in corn shellers.

H. H. Fultz, of Lexington, Miss., for improvement in cotton gins.

Daniel George, of Nazareth, for wind regulator for organ pipes.

Ellwood Gazette, of Wilmington, Del., for improvement in vibrating pumps.

Peter Geiser, of Smithsburg, Md., for improvement in grain separators.

Samuel Gardiner, Jr., of New-York, for improved amalgamator.

Thos Goodrum, of Providence, for improvement in portable boring machines.

G. W. Goodale, of Clinton, Mass., for machine for making envelopes, etc.

Samuel L. Hay, of Reading, Mass., for improvement in the variable exhaust of locomotive engines.

Job Jonson, of Brooklyn, for improved fish-hook.

Julius A. Jillson, of Poughkeepsie, and Henry Whinfield, of New-York, for improvement in apparatus for washing and bleaching fibrous and textile substances.

Wm. Lincoln, of Oakham, Mass., for machine for making wire dish covers.

Geo. M. Longacre, of New-Orleans, for improvement in economizing steam.

Harrison Norton, of Farmington, Me., for improvement in in ploughs.

A. S. Pelton, of Clinton, Ct., for improvement in radiators of steam-heating apparatus.

Washington A. Peaslee, of Indianapolis, for improvement in telegraphs.

William Patton of Townsend, Pa., for improved sash fastener.

Robert Rowland, of St. Louis, for improvement in the mutual arrangement of vinegar rooms and white-lead corroding chambers.

Smith A. Skinner, of Derby, Vt., for improved farm gate.

John Smylie, of Philadelphia, for improvement in register bottle fastenings.

Wm. M. Storm, of New-York, for improvement in applying fire-extinguishing cartridges.

Isaac M. Singer, of New-York, for improvement in sewing machines.

Hezekiah B. Smith, of Lowell, for mortising machine.

H. R. Smith, of Massena, N. Y., for improvement in seeding machines.

David Shine, of Philadelphia, for improved daguerreotype plate holder.

Wm. J. Scott, of Carthage, for improved method of feeding the shingle bolt to knives.

Elliott Savage and Noah C. Jmith, of East Berlin, Ct., for improvement in machines for double seaming cans.

J. C. Steddard, of Worcester, for apparatus for producing music by steam or compressed air.

Samuel Vansyckel, of Jersey City, for improvement in interlocking grate bars.

George W. Worden, of Fayetteville N. Y., for guage attachment for sawing machines.

Daniel K. Winder, of Cincinnati, for improved card printing press.

Joseph Welton, of Waterbury, Ct., for leading clasp for cattle.

John K. Weber, of Seneca Falls, for improved method of operating farm gate.

John C. Webb, of New-York, for improvement in argand lamps.

J. S. Brown, of Washington, D. C., assignor to Joseph Kent, of Baltimore county, for improvement in lard lamps.

James H. Cook, Taunton, dust deflector for car-windows.

Albert Fuller, Boston, Faunet.

Andrew Hotchkiss, Sharon, a projectile for ordnance.

Benj. Hancock, Troy, N. Y., excavator.

Jasper Johnson, Geneseo, N. Y., vise.

Joseph Keech, Waterloo, N. Y., washboard.

E. McCormick, Connellsville, Pa., seed planter.

John McLaughlin, Steubenville, O., wringer.

J. M. Singer, New-York, sewing machine for clothes.

Benj. Wright and John Bean, Hudson, Mich., grain separator.

Lewis P. Pease, Mt. Carmel, Ill., churn.

H. B. Weaver, S. Windham, Ct., breech loading arms.

Hiram Morris, Elisha K. Gorton, and Edward Sayer, Crawford county, Pa., impact waterwheel.

Charles Love, Peru, Ill., washing machine.

John H. Doolittle, assignor to American Hosiery Co., knitting machine.

P. G. Wynkoop, assignor to H. L. Odson, Corning, N. Y., seed planter.

Daniel K. Winder, Cincinnati, O., inking apparatus for card printing presses.

Edwin Wilson, Prattsburg, N. Y. extension reach for carriages.

Theodore Ackerman, assignor to H. H. Homan, Wm. Mahle, & Theodore Ackerman, Cincinnati, O., casting tea-pot spouts and handles.

John Bell, of Harlem, improved dove-tailing machine.

Cyrus Clapp, Montague, Mass., improvement in scythe fastening.

Wm. W. Cumberland, Newark, improvement in felting hat bodies.

Jno. B. Creemer, Philadelphia, improvement in coal lifters.

Julius C. Dickey, Saratoga Springs, improvement in gas regulators.

Samuel S. Day, New-York, improved daguerreotype plate vise.

Samuel Fays, Lowell, improvement in finishing carpets.

Thomas Harsha, West Union, O. card printing press.

George G. Hunt, Wolcotville, Ct., improvement in melodeons.

Charles Mahon, Washington, improvement in safety attachment in front of railroad cars.

Daniel B. Neaf, Mount Gilead, Ohio, improvement in seed planters.

Stimmel Lutz, Philadelphia, improvement in sealing preserved cans.

Oscar Reichenbach, Norriton Township, Pa., improvement in preparing cotton seed for extracting oil.

Robert A. Smith, Philadelphia, improved machine for sweeping gutters, etc.

Wm. S. Loughborough, Rochester, machine for composing and setting types.

Joseph Woodruff, Rahway, N. J., improvement in elastic diaphragm steam pressure regulators.

George H. Yard, Trenton, N. J., improvement in whiffle-trees.

Robert Anderson, Brooklyn, and John E. Anderson, New-York, improvement in rice hulling machines.

Wm. R. Crocker, Norwich, Conn., machine for manufacturing corks.

Luther B. Fisher, Coldwater, Michigan, for improved device for gauging and setting saw-mill dogs.

Isaac N. Forrester, Centreville, Va., for improved method of hanging mulley saws.

Julius Fink, Philadelphia, improvement in cooking ranges and air heaters.

Luther B. Fisher, Coldwater, Michigan, improvement in straw cutters.

Liveras Hull, Charleston, improvement in machinery for braiding.

Robert Griffiths, Allegany City, improvement in nut machine.

Peter Hogg, New-York, improvement in surface condensers for steam engines.

Richard G. Holmes and William H. Butler, New-York, improvement in locks.

Jno. Stuber and Thomas Harden, Utica, N.Y., improvement in lamps.

James O. Leech, Ballston, improvement in looms.

H. L. B. Lewis, Philadelphia, for ventilating railroad cars

Henry Luther, Providence, improvement in ring and traveler spinning frames.

L. W. Langdon, Rochester, improvement in sewing machines.

Wm. Mootry, New-York, improvement of stoves.

E. N. Horsford, Cambridge, and James R. Nichols, Haverhill, Mass., improvements in lamps for burning volatile liquids.

Geo. Patten, Washington, D. C., improvement in corn and cob mills.

Owen Redmond, Rochester, for spoke and axe-helve machine.

J. K. Tailor, Binghamton, for method of ventilating railroad cars.

James West, Syracuse, improvement in roofing compositions.

Aretus A. Wilder, Detroit, improved lath machine.

C. P. S. Wardwell, Lake Village, N. H., for machine for cutting double tenons.

Jno. W. Yothers, Spruce Grove, Pa., improvement in bedstead fastenings.

Henry W. Dickinson, Rochester, assignor to Lansing B. Swan, of same place, for machine for feeding paper to printing presses.

Daniel E. Eaton, Boston, assignor to himself and Perley O. Eaton, of same place, for improved burglars' alarm.

John H. Hunter, Baltimore, assignor to Samuel B. Blair, Philadelphia, improvement in gas brackets.

Chas. E. Bertrand, New-York, improvement in sugar filterers.

Samuel Krauser, Reading, Pa., improvement in cider or wine mills.

Henry Burt, Newark, improvement in machines for sawing marble.

Thos. W. Bakewell, Cincinnati, method of heating air for blast furnaces.

George C. Barney, Brookline, Mass., improvement in making whiffle-trees.

Henry A. Bleckman, Ronsdorf, Prussia, bench plane iron.

Andrew Blaikie and Walter Clark, St. Clair, Mich , lath machine.

Alex. H. Brown, Washington, improvement in brick machines.

Thomas Doyle, New-York, improved arrangement of two beam engines with parallel shafts.

Michael Egan, Ogdensburg, improvement in automatic lubricators for railroad axles.

Arasmus French, Waterbury, Conn., improvement in knitting machines.

Daniel Haldeman, Morgantown, Va., improvement in washing machines.

John Harris, Lawrence, Mass., improvement in self-acting mules.

D. W. G. Humphrey, Gray, Me., improvement in locks.

Stephen Hill and Wm. J. Wood, Rochester, improvement in gas holders.

Horace Lane, Windsor, Vt., saw-horse.

Jeremiah A. Marden, Newburyport, and Henry A. Butters, Haverhill, improvement in machines for splitting leather.

Wm. Nixon, Adrian, Mich., improved cutter head for rotary plane.

Bernard O'Reilly, New York, improved composition for kindling fires.

Loomis E. Payne and Orvis Pier, Stowe, Vt., mortising machine.

Chas. Perley, New-York, improvement in chain locker pipes.

Henry N. Pettingill, Rockford, Ill., improvement in steam-boilers.

Robert G. Pine, Newark, improvement in marble sawing machines.

Elias Matteson, Dayton, Walter M. Parris, Dorset, Vt., and Hervey Parris, Pawlet, Vt., improvement in rotary steam engines.

J. W. Ross, Zanesville, improved made of hanging window sashes.

James Sadgebury, Philadelphia, improvement in clothes clamps.

Samuel W. Shryock, Hopkinsville, Ky., improvement in drilling and boring machine.

Elliot Savage, East Berlin, Conn., improvement in arranging and feeding screw planks.

Isaac M. Singer, New York, improvement in sewing machines.

J. Sutton, N. Y., self-feeding atmospheric lubricator.

Amos Westcott, Syracuse, improvement in door-springs.

Peter Van Zile, Searles M. Griffin and J. W. Dey, New York, sofa life-boat.

John W. Davies, Richmond, Va., chimney cap.

RE-ISSUE.

Jonathan Haines, Pekin, Ill., improvement in harvesting machines. Patented March 27, 1849

ADDITIONAL IMPROVEMENT.

Henry Ruttan, Cobourg, Canada, ventilating and warming houses. Patented Dec. 5, 1848.